

# *The* SOUTHERN ECONOMIC JOURNAL

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AND THE UNIVERSITY OF NORTH CAROLINA

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*The* SOUTHERN ECONOMIC JOURNAL

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ASPECTS OF THE ECONOMICS OF POPULATION  
GROWTH—PART I\*

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Man's industrial activities are merely a highly specialized . . . form of the general biological struggle for existence. . . . Dissipation must in some way be balanced if the regime is to continue.<sup>1</sup>

Malthus, in his famous essay on population, dealt primarily with the reproductive response of man to an increase in the supply of things available for his support and with the reaction of man as a producer and capital-former to an increase in his numbers.<sup>2</sup> Malthus's account of man's reproductive response to his changing situation has proved inadequate, at least in respect to a considerable portion of mankind. His apprehensions regarding the probable effect of increasing numbers upon aggregate and per capita production have not been realized in culturally advanced states. In recent years, therefore, there has developed a disposition on the part of contemporary social scientists, particularly on the part of those who look upon themselves as "population experts," to underrate Malthus's very real contributions to the setting and the formation of "population theory."

Although this disposition to misunderstand Malthus is not important in itself, it becomes significant in so far as its untenable presuppositions become the basis of population policies. On such a basis rest most of the criticisms of the income- or welfare-optimum theories as well as a part of the theoretical understructure of contemporary programs whose purpose is the stimulation of population growth. On this basis also rests the belief that industrial development alone can overcome the niggardliness of nature, dissolve the perversity of man, and drive a stake through the heart of the Malthusian vampire.

It is not our purpose in this essay specifically to appraise the policies to which we have referred. It is our purpose rather to state carefully some of the elements of what may be called the economics of population growth. In Section I of this paper we develop the theory of interfactor substitutability and examine its determinants. In Section II we apply this theory to the population problem

\* Part II will appear in the next issue.

<sup>1</sup> A. J. Lotka, *Elements of Physical Biology*, p. 208.

<sup>2</sup> See my "Malthus's Total Population Theory: A Restatement and Reappraisal," *Canadian Journal of Economics and Political Science*, XI, 1945, pp. 83, 234.

under essentially constant conditions, and inquire into the circumstances regulating the substitutability of labor (or population) for the resources with which it is cooperant. In Section III the principle of convertibility, together with its relation to the principle of substitutability, is analyzed. In Section IV we examine the dynamic influences to which the principles of substitutability and convertibility are exposed, while in Section V we consider the constraints to which these dynamic influences are subject. In Section VI certain relevant aspects of the optimum theory are tersely treated. In Sections VII–VIII we present data which are intended to suggest the demographic situation of the world and to provide realistic illumination of the principles discussed in the preceding sections. Sections I–IV comprise Part I; Sections V–VIII will constitute Part II.

# I

In this section we shall describe two concepts of elasticity of substitution, of which we make use in subsequent sections. Let us suppose a closed economy in which only two homogeneous agents of production are used, a variable agent  $P$  whose supply is increasing relative to that of an agent  $R$  whose supply may be defined as relatively or absolutely fixed. Other relevant circumstances that may affect the comparative productivity of the two agents of production—e.g., patterns of tastes, methods of production, organization of productive agents, etc.—remain constant. Let  $P_{m1}$  and  $P_{m2}$  represent, in our closed economy, the respective marginal products of  $P$  when  $n$  and  $n + 1$  units of  $P$  are being combined, under optimum conditions of productive organization, with a fixed quantity  $k$  of agent  $R$ . Let  $P_{a1}$  and  $P_{a2}$  be the corresponding average products of  $P$ , and  $R_{m1}$  and  $R_{m2}$ , the corresponding marginal products of  $R$ . Let  $T_1$  and  $T_2$  represent the total net product of goods and services when  $n$  and  $n + 1$  units, respectively, of  $P$  are combined with the fixed quantity  $k$  of agent  $R$ . Let  $S_{p1}$ ,  $S_{p2}$ ,  $S_{r1}$ , and  $S_{r2}$  represent the fraction of  $T$  imputable to  $P$  and  $R$ , respectively, when  $n$  and  $n + 1$  units of  $P$  are combined with quantity  $k$  of  $R$ .

It will be supposed for the present that under the conditions laid down the production function of our economy is essentially linear and homogeneous: if the quantities of  $P$  and  $R$  that are being combined in our closed economy are each increased by a given fraction  $f$ , total net product  $T$  will also be increased by  $f$ . In reality, of course, this supposition does not hold for each small fractional increase of agents  $P$  and  $R$ , since productive services and technological processes are not infinitely divisible. Yet we shall suppose it to hold essentially, nonetheless, since, if we postulate a sufficiently large (though absolutely small) fractional increase  $f$  in the utilized quantities of agents  $P$  and  $R$ ,  $T$  will increase in like measure.

Let  $\sigma$  (or  $\sigma_{pr}$ ) represent the elasticity of substitution of variable agent  $P$  for fixed agent  $R$ , as defined by Allen, following Hicks and Robinson.<sup>3</sup> In terms

<sup>3</sup> For convenience we write  $\sigma$  instead of  $\sigma_{pr}$ , since our discussion usually runs in terms of the substitution of varied agent  $P$  for fixed agent  $R$ . If  $P$  is fixed and  $R$  is varied, we write  $\sigma_{rp}$ . For like reason we write  $S$  instead of  $S_p$ , to represent Machlup's concept when  $P$  is varied. The concept of elasticity of substitution was developed originally by Hicks



of our particularized symbols,  $\sigma$ , which was originally employed to describe variation along a constant product curve, approximates  $\frac{1}{n} \div \frac{dr}{r}$  when:  $\frac{1}{n}$  is small,

$r = \frac{R_{m1}}{P_{m1}}$ , and  $dr = \frac{R_{m2}}{P_{m2}} - \frac{R_{m1}}{P_{m1}}$ . Then, as a rule,

$$\sigma = \frac{R_{m1} P_{m2}}{n(P_{m1} R_{m2} - P_{m2} R_{m1})} \quad (1)$$

Equation (1) may be expressed in more general terms. Let  $x$  represent the varying quantity of the variable agent  $P$  that is being combined, in the economy, with the fixed quantity  $k$  of the invariable agent  $R$ . Let  $f(x)$  = the average product  $P_a$  of  $P$ . Then  $xf(x) = xP_a$  = total net product  $T$ ;  $f(x) + xf'(x) = P_m$ , the marginal product of  $P$ ;  $x[f(x) + xf'(x)] = xP_m (= S_p T)$ , the imputed product of agent  $P$ ;  $\frac{d}{dx}(P_a) = f'(x)$ ;  $\frac{d}{dx}(P_m) = 2f'(x) + xf''(x)$ . The imputed product of the fixed agent  $R$  is  $T - xP_m$  which equals  $xf(x) - x[f(x) + xf'(x)]$ . This reduces to  $-xf'(x)$ ; and  $R_m$ , the marginal product of the fixed agent  $R$ , becomes  $\frac{-xf'(x)}{k}$ . The equation  $\sigma = \left[ d\left(\frac{x}{k}\right) \div \frac{x}{k} \right] \div \left[ d\left(\frac{R_m}{P_m}\right) \div \frac{R_m}{P_m} \right]$  is reducible to

and Robinson to deal with problems in the field of the theory of distribution. Moreover, as originally formulated, it was expressed in terms of the technical substitutability of one factor of production for another under given conditions of production. It did not take into account the indirect substitution of factors for one another through the medium of commodity substitution; nor apparently did it take explicitly into account the substitution of some given factor for another through the introduction of a method of production making relatively greater use of this given factor. In our discussion of the elasticity of substitution in the economy as a whole, we do not refer to the elasticity of demand for product as a whole since this is infinite; but in our treatment of the changes in industrial composition which may accompany population growth, we must take into account the accompanying changes in demand since these, together with the elasticity of technical substitution within given industries, govern changes in industrial composition.

In this paper we are concerned with the bearing of substitutability upon per capita output, and only incidentally with the possible effects of population growth upon the distribution of income. It is assumed that, given correct factor pricing, the division of income may reflect either (a) the productivities of the several factors and the distribution of their ownership, or (b) condition (a), together with such institutional arrangements as have been introduced to modify the force of (a). In the real world, of course, division of income is under the government of both condition (b) and the circumstances that make for factor immobility and the incorrect factor pricing.

On the elasticity of substitution see J. R. Hicks, *The Theory of Wages*, chap. vi and pp. 241-47, and "Distribution and Economic Progress: A Revised Version," *Review of Economic Studies*, IV, 1936, pp. 1-12; Joan Robinson, "The Classification of Inventions," *Review of Economic Studies*, V, 1938, pp. 139-42; and *The Economics of Imperfect Competition*, pp. 256 ff., 330 n.; R. G. D. Allen, *Mathematical Analysis For Economists*, pp. 340 ff.; Fritz Machlup, "The Commonsense of the Elasticity of Substitution," *Review Of Economic Studies*, II, 1935, pp. 202 ff.; A. C. Pigou, "The Elasticity of Substitution," *Economic Journal*, XLIV, 1934, pp. 232-41. R. F. Kahn and D. G. Champernowne, "Elasticity of Substitution," *ibid.*, XLV, 1935, pp. 242-58; and a number of notes by P. M. Sweezy, A. P. Lerner, R. F. Kahn and J. R. Hicks, *Review of Economic Studies*, I, 1933, pp. 67-80, and by M. Friedman, J. Robinson, A. Lerner, and F. Machlup, *ibid.*, III, 1936, pp. 147-52.

$$\sigma = \frac{P_m d(P_a)}{P_a d(P_m)} \quad (2)$$

Thus  $\sigma$  = the marginal product of the variable agent  $P$  times the rate of change (fall) in the average product of  $P$  divided by the average product of  $P$  times the rate of change (fall) in the marginal product of  $P$ .

So long as  $\sigma > 1$ , the quantity  $\frac{xP_m}{kR_m}$  increases with the increase in  $x/k$  (that is, the amount  $x$  of the variable agent  $P$  which is being combined with the fixed amount  $k$  of the invariable agent  $R$ ). When  $\sigma = 1$ , the quantity  $\frac{xP_m}{kR_m}$  remains unchanged as  $x/k$  increases; while when  $\sigma < 1$ , the quantity  $\frac{xP_m}{kR_m}$  diminishes with the increase in  $x/k$ . As we shall indicate later, the rate of decline in the average product  $P_a$  is lower in the first than in the second case, and lower in the second than in the third case. What has been said is represented graphically in Figure I. The logarithmic values of  $x/k$  and  $\frac{P_m}{R_m}$  are represented along the abscissa and the ordinate, respectively. The diagonal line (1) describes a situation in which  $\sigma = 1$ , for at all points along this line the logarithm of the number  $\frac{P_m}{R_m}$  plus the logarithm of the number  $x/k$  equals a constant value  $c$  ( $= \log 3$ ). Line (2), lying below the diagonal, describes a situation in which  $\sigma < 1$ , for the sum of the logarithms of the numbers  $x/k$  and  $\frac{P_m}{R_m}$  diminishes as  $x/k$  increases. When the sum of the logarithms of the numbers  $x/k$  and  $\frac{P_m}{R_m}$  increases with the increase in  $x/k$ , as in the situation described by line (3),  $\sigma > 1$ .

The fraction  $S_p$  of the total net product  $T$  that is imputable to  $P$  remains constant so long as  $\sigma = 1$ ; it declines when  $\sigma < 1$ , and it increases when  $\sigma > 1$ . Accordingly, if the only force operating to increase the aggregate net product  $T$  is the increase in  $x/k$ , and if the division of net product is governed solely by the marginal productivity principle,<sup>5</sup> one may infer from the change in  $S_p$  whether  $\sigma \geq 1$ . If, under these same circumstances, it is possible to determine  $P_a$ ,  $P_m$ ,

$$^4 \sigma = \left[ d \left( \frac{x}{k} \right) \div \frac{x}{k} \right] \div \frac{dr}{r}, \text{ when } r = R_m \div P_m \text{ and } dr = d(R_m \div P_m).$$

Hence

$$\sigma = \left[ d \left( \frac{x}{k} \right) \div \frac{x}{k} \right] \div \left[ d \left( \frac{-x^2 f'(x)}{f(x) + x f'(x)} \right) \div \left( \frac{-x^2 f'(x)}{f(x) + x f'(x)} \right) \right]$$

This becomes, when  $k = 1$ ,

$$\sigma = \frac{[f(x) + x f'(x)] f'(x)}{f(x) [2 f'(x) + x f''(x)]} \quad (3)$$

<sup>5</sup> That is, with  $T = xP_m + kR_m$ ,  $xP_m$  and  $kR_m$ , respectively, flow to  $P$  and  $R$ .

and the rates of change (i.e.,  $\frac{d}{dx}[P_a]$  and  $\frac{d}{dx}[P_m]$ ) in  $P_a$  and  $P_m$ , the precise value of  $\sigma$  may be arrived at. When product-affecting forces (e.g., changes in productive techniques, in productive organizations, in patterns of consumption, etc.) other than increases in  $x/k$  are at work at the same time that  $x/k$  is growing, changes in the marginal substitutability of  $P$  for  $R$  reflect the influence of these other forces as well as that of increases in  $x/k$ ; hence the value of  $\sigma$  as such can be determined, given the other relevant data, only in so far as indices of these other product-affecting forces are at hand.<sup>6</sup>

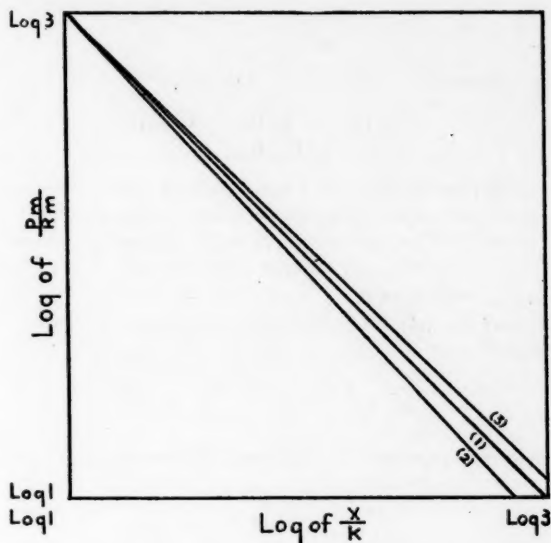


Figure I

The  $\sigma$  concept, since it had to do with the substitution of one agent for another along a constant product curve, related only to the elasticity of the direct technical substitutability of one agent for another; it did not take into account

<sup>6</sup> In manufacturing in the United States in 1899-1922 the ratio of fixed capital to labor rose from 1.0 to 2.7; yet the fraction of the product distributed to capital and presumably imputable to capital remained practically constant at 0.25. Had there been no significant technological changes, innovations, etc., in this period, it could be inferred that the elasticity of substitution of capital for labor had continued at unity. But there were improvements of various sorts. Hence the constancy of the share of the product going to capital must be attributed in part to these improvements which prevented the decline in the elasticity of substitution of capital for labor that otherwise would have taken place. See Paul H. Douglas, *The Theory Of Wages*, esp. chap. 5; also David McC. Wright, "Limits to the Use of Capital," *Quarterly Journal of Economics*, LVIII, 1944, pp. 331-58. See also note 21 below.

the indirect substitution of one factor for another through the medium of commodity substitution.<sup>7</sup> For purposes of the present discussion it probably is permissible, so long as the necessary *ceteris paribus* conditions are observed and the variable agent is labor and (therefore) a consuming unit, to conceive of the whole economy as a firm and to describe the change in the marginal substitutability of  $P$  for  $R$  in terms of  $\sigma$ . It is possible also to take both technical and commodity substitution into account by defining the elasticity of substitution  $S$  (or  $S_{pr}$ ) of a variable agent  $P$  for a fixed agent  $R$  as Machlup has defined it. In our simpler terms<sup>8</sup>

$$S = \frac{P_{m2} - (n[P_{m1} - P_{m2}])}{nP_{m1}} \div \frac{P_{m2}}{nP_{a1}} \quad (4)$$

This equation reduces to

$$S = \frac{P_{a1}\{P_{m2} - (n[P_{m1} - P_{m2}])\}}{P_{m1}P_{m2}} \quad (5)$$

When, given an increase of  $n$  to  $n + 1$  in the ratio of  $P$  to  $R$  (hereinafter called  $P/R$ ), the amount of net product imputable to the varied agent  $P$  increases at the same rate as does total net product  $T_1$ ,  $S = 1$ . When this amount increases at a lesser rate than  $T_1$ ,  $S < 1$ , and when at a greater rate,  $S > 1$ ; if it does not increase because  $P_{m2} = 0$ ,  $S = 0$ .

Equations (4) and (5) may be expressed in more general terms.<sup>9</sup> Equation (4) may be restated

$$S = \frac{d(xP_m)}{xP_m} \div \frac{d(xP_a)}{(xP_a)} \quad (6)$$

This equation reduces to equation (7) which may replace equation (5):

$$S = \frac{P_a}{P_m} \frac{d(xP_m)}{d(xP_a)} \quad (7)$$

Thus  $S$  = the average product of the variable agent  $P$  times the rate of change in the imputed product of the variable agent divided by the marginal product of the variable agent times the rate of change in the total net product.

<sup>7</sup> This point is discussed again below. Hicks has proposed that the combined elasticity of the technical and the commodity substitutability of one factor for another be defined as "the arithmetical sum of the elasticity of commodity substitution and . . . elasticity of technical substitution." See his "Distribution and Economic Progress," *loc. cit.*, pp. 8, 10, and p. 8, note on formula for commodity elasticity of substitution between factors.

<sup>8</sup> See first paragraph in this section.

<sup>9</sup> For meaning of terms see the paragraph above in which equation (2) is developed.

<sup>10</sup> That is,

$$S = \frac{f(x) [f(x) + 3xf'(x) + x^2f''(x)]}{(f(x) + xf'(x))^2} \quad (8)$$

Although the denominator reads  $(P_m)^2$  since  $P_m = d(xP_a)$ , the second element in the denominator of equation (7) is represented as  $d(xP_a)$ , or the rate of change in the aggregate net product  $T (= xP_a)$ .

Although  $S$  and  $\sigma$  are equal only when  $S = \sigma = 1$  and when (because  $P_m = 0$ )  $S = \sigma = 0$ , they vary in the same direction. When  $S < 1$ ,  $\sigma < 1$ ; and when  $S > 0$ ,  $\sigma > 0$ . The possible maximum values for  $S$  and  $\sigma$  differ. When a small increment in the variable agent  $P$  is accompanied by no decrease in the marginal product of  $P$ , we have infinite elasticity of substitution of the variable for the fixed agent and  $\sigma = \infty$ . The maximum value of  $S$ , on the contrary, is governed, *ceteris paribus*, by the ratio of  $P_m$  to  $R_m$ , being high when this ratio is low and low when this ratio is high. In the limiting case in which the whole of the net product  $T$  is imputable to  $P$ , the maximum value of  $S = 1$ . Illustrative values based on equation (5) for  $S$  are given in columns 2 and 3 of Table I; corresponding values for  $\sigma$  are given in the last column.

TABLE I  
Illustrative Cases\*

CASES	MARGINAL VALUES		AVERAGE	$\sigma$
	$P_m$	$R_m$	$P_a$	
I: $Pm_1 = .1$	$Pm_1 = .10000$	$Rm_1 = .90000$	$Pa_1 = 1.00000$	—
(a) $S = 10$	$Pm_2 = .10000$	$Rm_2 = .90000$	$Pa_2 = .991089$	$\infty$
(b) $S = 1$	$Pm_2 = .09911$	$Rm_2 = .90089$	$Pa_2 = .991080$	1
(c) $S = 0$	$Pm_2 = 0$	$Rm_2 = 1.00000$	$Pa_2 = .990099$	0
II: $Pm_1 = .5$	$Pm_1 = .50000$	$Rm_1 = .50000$	$Pa_1 = 1.00000$	—
(a) $S = 2$	$Pm_2 = .50000$	$Rm_2 = .50000$	$Pa_2 = .99505$	$\infty$
(b) $S = 1$	$Pm_2 = .49751$	$Rm_2 = .50249$	$Pa_2 = .99500$	1
(c) $S = 0$	$Pm_2 = 0$	$Rm_2 = 1.00000$	$Pa_2 = .99010$	0
III: $Pm_1 = .9$	$Pm_1 = .9000$	$Rm_1 = .1000$	$Pa_1 = 1.000000$	—
(a) $S = 1.11$	$Pm_2 = .9000$	$Rm_2 = .1000$	$Pa_2 = .999010$	$\infty$
(b) $S = 1$	$Pm_2 = .8991$	$Rm_2 = .1009$	$Pa_2 = .999001$	1
(c) $S = 0$	$Pm_2 = 0$	$Rm_2 = 1.0000$	$Pa_2 = .990099$	0

\* The values in these cases are based upon the assumption that the values for  $P_m$  and  $P_a$  approach equality as the amount of  $P$  combined with  $R$  approaches zero.

Since  $S$  and  $\sigma$  vary in the same direction, each concept of elasticity of substitution may be utilized for the purposes of this essay. As a rule we shall use  $S$ , since it explicitly takes commodity as well as technical substitution into account. When, however, it is more convenient to use  $\sigma$ , it will be employed.

(i) The magnitude of the average product  $P_a$  of the variable agent  $P$  depends, *ceteris paribus*, upon the magnitude of  $P_m$ , the marginal product of  $P$ , and upon the elasticity of substitution  $S$  by which the rate of decline in  $P_m$  is conditioned.<sup>11</sup>

(ii) The incremental rate of decline in the average product  $P_a$  is conditioned by the incremental rate of decline in the marginal product  $P_m$ , and this rate is conditioned in turn by  $S$  and by the incremental rate of change in  $S$ .<sup>12</sup> When (with other conditions constant)  $S$  equals and continues at some given value

<sup>11</sup> From equation (7) it follows that  $P_a = \frac{S(P_m)^2}{d(xP_m)}$ ; and that  $P_m = \frac{P_a d(xP_m)}{S d(xP_a)}$ .

<sup>12</sup> This follows from the equations in the preceding footnote.

(say 1), the average product  $P_a$  declines as  $x/k$  increases, at the rate corresponding to the given value of  $S$ . If  $d(S)$  is negative and  $S$  is declining, then, as  $x/k$  increases,  $P_a$  declines at a rate increasingly higher than that ruling in the previous case. If, on the contrary, with  $P_m$  and  $P_a$  diminishing,  $d(S)$  becomes positive and  $S$  increases,  $P_a$  continues to decline but at a lower rate than would have ruled if  $S$  had remained constant.<sup>13</sup>

In column 4 of Table I illustrative values for particular cases are presented to show that the mean rate of decline  $\frac{P_{a1} - P_{a2}}{P_{a1}}$  in the average product  $P_{a1}$  varies inversely with  $S$ ,<sup>14</sup> other conditions being given. For example, in Case I with  $R_{m1}/P_{m1} = 9$ , the rate of decline in  $P_{a1}$  is .008911 when  $S = 10$ , and .00892 when  $S = 1$ .<sup>15</sup>

The rate of decline in the average product varies inversely with the ratio  $P_m/R_m$ , other conditions remaining constant. Let  $S = 1$  and let  $P_m + R_m = 1$ . Then, since the change in average product consequent upon increase  $\Delta x$  in  $x$  depends upon the magnitude of  $P_m$ , and since prior to the addition of  $\Delta x$ ,  $P_m$  was defined as equal to  $1 - R_m$ , the rate of fall in  $P_a$  is conditioned by  $P_m/R_m$ .<sup>16</sup>

<sup>13</sup> It follows from equation (2) that  $P_a = \frac{P_m d(P_a)}{\sigma d(P_m)}$ , and that  $P_m = \frac{\sigma P_a d(P_m)}{d(P_a)}$ . Whence

it is evident that the incremental rate of change in  $P_a$  is conditioned by the incremental rate of change in  $P_m$  which rate in turn is conditioned by  $\sigma$  and the rate of change in  $\sigma$ . For, *ceteris paribus*, the greater is the value of  $\sigma$ , the lower is the rate of decline in  $P_m$ ; and the lower the rate of decline in  $P_m$ , the lower is the rate of fall in  $P_a$ . If  $d(\sigma)$  is negative, and  $\sigma$  is declining, the rate of decline in  $P_a$  increases in accordance with the magnitude of  $d(\sigma)$ . If  $d(\sigma)$  is positive, and  $\sigma$  is increasing, the rate of fall in  $P_a$  declines in accordance with the magnitude of  $d(\sigma)$ .

<sup>14</sup> This is to be expected, of course, since the rate of decline in  $P_a$  is conditioned by the rate of decline in  $P_m$ , which depends in turn upon the substitutability of  $P$  for  $R$ . Consider the special case in which  $P_a$  and  $P$  approach equality as the amount of  $P$  combined with  $R$  approaches zero. Under these conditions the mean rate of decline in  $P_a$  equals the mean rate of decline in  $P_m$  if the elasticity of the average curve is constant. If the elasticity of the average curve is increasing, the mean rate of decline in  $P_a$  is less than that in  $P_m$ ; while if the elasticity of the average curve is falling, the mean rate of decline in  $P_a$  exceeds that in  $P_m$ . The elasticity  $e$  of the average curve and changes in  $e$  are conditioned, respectively, by  $S$  and changes in  $S$ . For since  $e = f(x)/-x f'(x) = P_a/-x d(P_a)$ , it follows from the first equation in footnote 11 above that  $e = S(P_m)^2/-x d(x P_m) d(P_a)$ .

<sup>15</sup> From equation (4) it may be inferred that the rate of decline  $\frac{P_{a1} - P_{a2}}{P_{a1}}$  in the average product  $P_{a1}$  varies inversely with  $S$ . For the greater the magnitude of  $P_{a2}$ , the smaller is the decline  $\frac{P_{a1} - P_{a2}}{P_{a1}}$  in  $P_{a1}$ ; and the greater is  $S$ , the greater is  $P_{a2}$ , since

$$P_{a2} = \frac{n}{n+1} \left( \frac{SP_{m1}P_{m2}}{P_{m2} - n[P_{m1} - P_{m2}]} \right) + \frac{P_{m2}}{n+1}.$$

<sup>16</sup> If  $S = 1$  and  $P_{m1} = 1 - R_{m1}$ , it follows from the equation for  $P_{a2}$  given in footnote 15 that  $P_{a2}$  varies directly with  $P_{m1}/R_{m1}$ . Whence, since  $\frac{P_{a1} - P_{a2}}{P_{a1}}$  varies inversely with  $P_{a2}$ , and  $P_{a2}$  varies directly with  $P_{m1}/R_{m1}$ ,  $\frac{P_{a1} - P_{a2}}{P_{a1}}$  varies inversely with  $P_{m1}/R_{m1}$ .

Illustrative figures are given in Table II. Thus, if  $P_{m1} = 0.01$  and (therefore)  $P_{m1}/R_{m1} = 0.0101$ ,  $\frac{P_{a1} - P_{a2}}{P_{a1}}$  approximates 0.9803 per cent; while if  $P_{m1} = 0.99$  and  $P_{m1}/R_{m1} = 99$ ,  $\frac{P_{a1} - P_{a2}}{P_{a1}}$  approximates 0.01 per cent. What has been said in this paragraph involves no modification of the previous argument, however. For, given the ratio  $x/k$  of  $P$  to  $R$  and given that other conditions remain constant, the magnitude of  $P_m/R_m$  and the rates of fall in  $P_m/R_m$  and (therefore in)  $P_a$  are governed by the elasticity of substitution  $S$ .<sup>17</sup> The higher

TABLE II

ELEMENT	VALUES						
$P_{m1}$	.0100	.100	.250	.5000	.7500	.9000	.990
$\frac{P_{m1}}{R_{m1}}$	.0101	.111	.333	1.0000	3.0000	9.0000	99.000
$\frac{P_{a1} - P_{a2}}{P_{a1}}$	.9803	.892	.744	.4975	.2494	.0999	.010

\* In per cent.

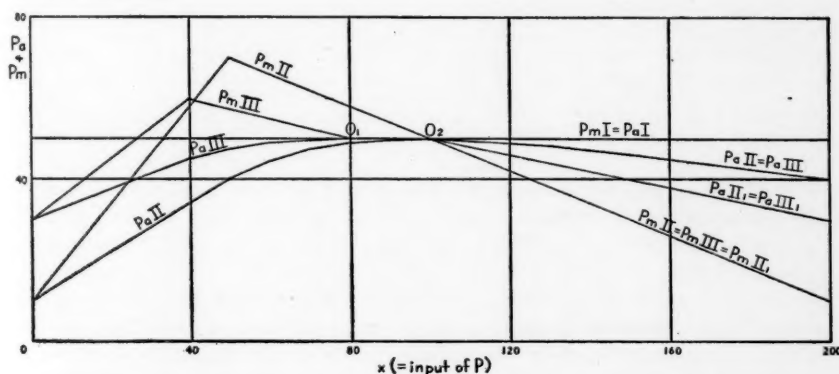


Figure II

the value of  $S$  and the lower its rate of fall (if any), the lower will be the rate of fall in  $P_m$ ,  $P_m/R_m$ , and  $P_a$ , associated with given increases in the ratio  $x/k$  of  $P$  to  $R$ ; while the lower the value of  $S$  and the greater its rate of fall, the higher will be the rate of fall in  $P_m$ ,  $P_m/R_m$ , and  $P_a$  associated with increases in  $x/k$ .

(iii) Inasmuch as the purpose of this section is facilitation of the subsequent discussion of the population problem, it will be assumed that as the amount  $x$  of  $P$  increases relatively to the fixed amount  $k$  of  $R$ , average product  $P_a$  passes from a stage in which  $P_a$  and  $P_m$  are increasing and  $P_a < P_m$  through a point where  $P_a = P_m$  into a stage where  $P_a$  and  $P_m$  are decreasing and  $P_a > P_m$ . In Figure II we present three marginal and three corresponding average curves to

<sup>17</sup> Or by  $\sigma$  if this concept is preferred.



illustrate the behavior of  $P_a$  and  $P_m$  under stipulated conditions; in Table III we give selected values from Figure II. Consideration of the behavior of  $P_a$  and  $P_m$  in Figure II will indicate that the rate of fall in  $P_a$  after the optimum point for  $P$  (where  $P_a = P_m$ )<sup>18</sup> is conditioned, *ceteris paribus*, by the relative magnitude of the preoptimum stage in which  $P_a$  and  $P_m$  are increasing and  $P_a < P_m$ .

The curves in Figure II represent varying conditions. The curve  $PmI = PaI$  describes the polar case in which  $S = 1$  and  $\sigma = \infty$ , the substitutability of  $P$  for

TABLE III  
Selected Values from Figure II

POPULATION = X	YIELDS PER UNIT INPUT OF POPULATION				
	Marginal Pm II	Average Pa II	Marginal Pm III	Average Pa III	Average PaII <sub>1</sub> = PaIII <sub>1</sub>
40	58	34	60	45	—
50	70	40	57.5	47.75	—
60	66	44.67	55	66	— <sup>*</sup>
80	58	49.00	50	58	—
100	50	50.00	50	50	50*
110	46	49.82	46	49.82	48
150	30	46.67	30	46.67	40
170	22	44.24	22	44.24	36
200	10	40.00	10	40.00	30

\* Since the origin of  $PaII_1 = PaIII_1$  is at  $x_0 = 0$ , the  $x$  and  $y$  values are: 0, 50; 10, 48; 50, 40; 70, 36; 100, 30.

$R$  being perfect with  $P_m = P_a$  for all values of  $x$ . Curve  $PmII$  rises to a peak of 70 at  $x = 50$  and then falls at a constant incremental rate to 10 at  $x = 200$ ; it passes through the corresponding average curve  $PaII$  at the optimum point  $O_2$  where  $x = 100$ .  $PmIII$  rises to a peak of 60 at  $x = 40$ , then falls at a constant incremental rate until at  $O_1$  (where  $x = 80$ ) it meets its corresponding average curve  $PaIII$ . Between  $O_1$  and  $O_2$  (i.e., between  $x = 80$  and  $x = 100$ )  $PmIII$  and  $PaIII$  are equal; but beyond  $x = 100$ ,  $PmIII$  falls below  $PaIII$ ,  $PmIII$  coinciding with  $PmII$  and  $PaIII$  with  $PaII$ .<sup>19</sup>  $PaIII$  is at a maximum in the optimum range

<sup>18</sup> By optimum point for  $P$  we mean the point where the average product  $P_a$  of  $P$  is at a maximum. This point is of much more importance for population analysis than for the usual treatment of the laws of return; for this point marks what will be called the population optimum (see Section VI).

It will be argued below that there is a limit to the substitutability of  $P$  for  $R$ ; in like manner it must be argued that there is a limit to the substitutability of  $R$  for  $P$ . Accordingly, for some very low value for  $x/k$  total net product  $T = 0$ ; for a high value for  $x/k$ ,  $P_m$  becomes zero; and for a much higher value for  $x/k$ ,  $T$  again becomes zero. See F. H. Knight, *Risk, Uncertainty, and Profit*, pp. 98-104. The curves in Figure II do not conform rigorously to the principle that  $T = 0$  when  $x/k$  is very small but positive.

<sup>19</sup> The argument that  $PmIII$  remains constant between  $x = 80$  and  $x = 100$  is not tenable under the conditions postulated in Figure II, since infinite elasticity of substitution is not a

lying between  $x = 80$  and  $x = 100$ . If we assume that the optimum point where  $Pa = Pm$  lies in the neighborhood of  $x = 0$ , and if accordingly we reduce  $x = 100$  to  $x = 0$  and make this (i.e.,  $O_2$ ) the point of origin, the formula for  $PmII = PmIII$  becomes  $y = 50 - .4x$ , and the formula for the corresponding average curve  $PaII_1 = PaIII_1$  becomes  $y = 50 - .2x$ . The difference between  $PaII = PaIII$  and  $PaII_1 = PaIII_1$  increases with the increase in the relative magnitude of that portion of  $x$  which lies to the right of the optimum point  $O_2$  where the average and the marginal values are equal. In short, the greater the ratio of the quantity  $x$  (of the variable agent  $P$ ) being used under postoptimum conditions (e.g., between  $x = 100$  and  $x = 200$ ) to the quantity being used under preoptimum (e.g., between  $x = 0$  and  $x = 100$ ) conditions, the lower *ceteris paribus* is average product  $P_a$ .<sup>20</sup>

In our discussion of the elasticity of substitution no attention has been devoted to the fact that since the substitutability of one factor for another is limited, the elasticity of substitution  $S$  (or  $\sigma$ ) must inevitably decline and eventually become zero if  $x$  (the amount of  $P$  combined with  $k$  of  $R$ ) continues to increase. Some production functions rest upon the assumption that  $\sigma$  ( $\dot{=} S = 1$ ) continues unchanged at the level of unity however much  $P$  increases relatively to  $R$ . The production function  $T = bR^{1-c}P^c$ , where  $b$  is a constant and  $c$  is the fraction ( $S_p$ ) imputable to  $P$ , is a case in point.<sup>21</sup> It is supposed that  $P$  is continuously substitutable for  $R$  and that therefore  $P_m$ , although declining, will not fall to

permissible assumption even within a short range. Nor is the polar case  $PmI = PaI$  tenable.  $PmIII$  will remain constant between  $x = 80$  and  $x = 100$  if the quantity of  $R$  being combined with  $P$  is increased at the same rate as  $P$  between the points  $x = 80$  and  $x = 100$ . See note 28 below where use is made of this feature of Figure II.

<sup>20</sup> Let  $x_o$  = the optimum quantity of variable agent  $P$  (e.g., 100 at  $O_2$  in Figure II);

$x$  = the aggregate amount of  $P$  being used;

$x_o = x - x_o$  = amount of  $P$  being used in excess of optimum amount;

$A_o$  = optimum (i.e., maximum) value of average function (e.g., of  $PaII$ );

$Ax$  = value of same function (e.g.,  $PaII$ ) at  $x$ ;

$A_o$  = value of same function if it has origin at  $x_o = 0$  (e.g.,  $PaII_1$  with origin at  $O_2$ ).

Then

$$Ax = \frac{x_o A_o + (x - x_o) A_o}{x}$$

If there were no initial stage of increasing returns such as the postulating of an optimum population implies,  $Ax$  would be identical with  $A_o$ , and the magnitude of  $A_o$ , as represented by  $PaII_1$ , would be governed solely by the movement of the corresponding marginal curve  $PmII_1$  with origin at  $x_o = 0$ . But given an initial stage of increasing returns, the value of  $Ax$  is governed both by that of  $A_o$  and that of  $A_o$ , which exceeds that of  $A_o$  at  $x_o > 0$ .

<sup>21</sup> This function Professor Douglas (see note 6 above) has used in many of his studies in manufacturing. In the United States the exponent for capital (i.e.,  $R$  in the above equation) Douglas found to be 0.25; that for labor (i.e.,  $P$  in the above equation), 0.75. Higher exponents for capital were found in Australia and New Zealand. See Douglas, "Professor Cassel on the Statistical Determination of Marginal Productivity," *Canadian Journal of Economics and Political Science*, IV, 1938, pp. 22-33. For criticisms see H. Mendershausen, "On the Significance of Professor Douglas' Production Function," *Econometrica*, VI, 1938, pp. 143-53, and M. W. Reder, "An Alternative Interpretation of the Cobb-Douglas Function," *Econometrica*, XI, 1943, pp. 259-64.

zero.<sup>22</sup> So great a degree of divisibility in the fixed agent  $R$  and so continuous a variation in the proportionality of  $R$  to  $P$  is not tenable.<sup>23</sup> We shall suppose that even though a production function may imply an elasticity of substitution of unity or slightly higher for some range of values of  $x$ , it is nevertheless to be inferred that if  $x$  is continually increased, the elasticity of substitution will finally fall to zero and the marginal product of the variable agent will become zero.

It has been assumed thus far that since no product-increasing forces other than the increase in  $x$  are at work,  $P_a$  must fall when  $x$  passes the value at which  $P_a = P_m$ . If, however, other product-increasing forces are working to raise  $P_a$ , then the increase in quantity  $x$  of  $P$  beyond the optimum amount operates to make the increase in  $P_a$  less than it would be were  $x$  constant. The repressive effect of the increase in  $P$  will depend upon  $S$ ,  $P_m/R_m$ , and the extent to which  $x$  exceeds its optimum value. In terms of curve  $PaII$  in Figure II, these three circumstances govern the (negative) elasticity of  $PaII$  while the forces operating to increase average product elevate the level of  $PaII$ ; the path which  $P_a$  traces is fixed by the sum of the two opposing forces. The product-increasing forces are not sufficiently strong, however, to counterbalance the downward pressure exerted upon  $P_m$  by a continuing increase in  $x$ ; for, given a finite economic universe, the product-increasing forces themselves are subject to limitations arising out of the finitude of the economic universe.

## II

In this section we express the effects of population growth under given conditions in terms of the principle of substitutability developed in the preceding section. For the sake of convenience we shall let  $P$  represent the variable population (or labor) factor;  $R$ , the comparatively invariable resources factor; and  $P_m$ ,  $R_m$ ,  $P_a$ , and  $R_a$ , the marginal and average products, respectively, of  $P$  and  $R$ . The other conditions postulated follow:

- (i) the economy is closed;
- (ii) the state of the arts, innovation, and product-influencing organization is constant;
- (iii) individual preference scales continue unchanged;
- (iv) the population factor  $P$  is homogeneous;
- (v) the resources factor  $R$  is homogeneous;
- (vi) the age composition of the population is stable;<sup>24</sup>

<sup>22</sup> Other cases in point are  $T = ax/x^n$  when  $n < 1$  and  $a$  is a constant; and  $T = P_m(1 - r^n)/(1 - r)$  when  $r$  is the ratio between successive marginal products.

<sup>23</sup> See note 18 above; also George J. Stigler, *The Theory of Price*, chap. 8.

<sup>24</sup> Whence the population of working age constitutes an unchanging fraction of the total population; and each age-group component of the population of working age forms a constant fraction of the population of working age. On the influence of changes in age composition see my "Population Movements, Employment, and Income," *Southern Economic Journal*, V, 1938, pp. 142-48.; "Some Effects of Changes in the Age Composition of the Labor Force," *ibid.*, VIII, 1941, pp. 157 ff.; and "Population Trends and the Future Demand for Teachers," *Social Forces*, XIX, 1941, pp. 465 ff.

- (vii) the number of persons employed constitutes a constant fraction of the population of working age;<sup>25</sup>
- (viii) the relative amount of "disguised unemployment" continues unchanged.<sup>26</sup>

To these conditions yet another must be added:

- (ix) that the income-increasing forces postulated by the optimum theory have been exhausted, and that population has grown to the upper limit of the optimum range (if there be such a range).

The income-optimum population theory supposes that, as the population composing an economy increases in number, per capita output rises until the attainable maximum permitted by prevailing nondemographic circumstances is reached.<sup>27</sup> When this maximum is exceeded, further population growth is accompanied by a decline in per capita output unless there exists a *reserve* supply of *idle* resources for combination with further increments of population; after this reserve has been put into use and it is no longer possible to equip additional increments of population so well as the population already in existence, per capita output must decline.<sup>28</sup>

Given the nine conditions listed above, per capita output must fall if popula-

<sup>25</sup> For the present, therefore, we ignore the possible effects of changes in the rate of population growth upon the level of employment.

<sup>26</sup> Unemployment may range between 100 per cent when no one is employed and zero per cent when everyone is so employed that, given his training and inclinations and a fixed period of time for making adjustments, he could not produce enough more in any other line or place of employment to induce his shifting or being shifted thereto. All productive agents in an economy are in zero-unemployment equilibrium when what has just been said of labor holds for all agents. Other conditions being given, what constitutes zero-unemployment equilibrium is a function of the time interval allowed for making shifts and adjustments. See Joan Robinson, *Essays in the Theory of Employment*, pp. 82 ff., and C. D. Long, "The Concept of Unemployment," *Quarterly Journal of Economics*, LVII, 1942, pp. 6-25; also my "Population Trends . . .," *loc. cit.*, pp. 130-34. See also note 50 below.

<sup>27</sup> The increase in per capita output is attributable to increasing division of labor, improved organization, fuller exploitation of "lumpy" factors, and increasing returns to scale. The above discussion has to do with the population optimum measured in terms of per capita income (= output); it does not have to do with optima measured in terms of other indices. See Section VI.

<sup>28</sup> Output is governed not by resources which are idle and in reserve but by resources which are joined with population in productive activity. A reserve supply of resources may, under the conditions given, delay the advent of a decline in per capita output originating in population growth; but it cannot augment per capita output.

In terms of Figure II,  $O_2$  marks the maximum per capita output figure when production conditions are as described by  $PmII$ , and the optimum population coincides with  $x = 100$ . Curve  $PmIII$  may be said to describe a situation in which a reserve supply of idle resources exists. Per capita output is at a maximum when population =  $x = 80$ ; it does not fall until  $x = 100$  because as  $P$  increases from  $x = 80$  to  $x = 100$  the quantity of  $R$  is augmented at the same rate from an idle reserve of  $R$  and the ratio  $P/R$  is constant. When population has grown to  $x = 100$  and there remains no further reserve stock of  $R$  to equip additions to  $P$ ,  $P/R$  increases and  $P_o$  falls. Within the range  $x = 80$  and  $x = 100$  constant returns to scale rule, given that  $P$  and  $R$  increase at the same rate with other conditions constant.

tion continues to grow while the resource supply remains constant, or if, the optimum point having been passed, the population grows faster than the resource supply. For the only product-increasing force supposedly operative is the increase in population.

The rate of decline in per capita output  $P_a$  will depend upon the degree to which labor (i.e., population)<sup>29</sup> is substitutable,<sup>30</sup> throughout the *whole* economy, for the resources with which it is used jointly in productive processes. If an additional increment of population<sup>31</sup> cannot be used jointly with the resources available and in use, and cannot, therefore, add anything<sup>32</sup> to aggregate output, the rate of decline in per capita output is, *ceteris paribus*, at a maximum. If, on the contrary, population is a perfect substitute for resources, and marginal product  $P_m$  does not diminish, the rate of decline in per capita output  $P_a$  is at a minimum under the circumstances given. Since, as a rule, population is imperfectly substitutable for resources, per capita output falls as population increases (given the above nine conditions), but not so rapidly as it would fall if the marginal substitutability of population for resources approximated zero.

The substitution of population for resources consequent upon an increase in the ratio  $P/R$  will be governed by the responses, respectively, of producers and of consumers to the addition of an increment of labor to the stock of labor and resources already in use. When producers are primarily and immediately responsible for the absorption of the increment of labor, the substitution process is predominantly technical in character. Such will be the case if producers in a given industry, since they now can obtain labor at a lower relative price, combine a larger quantity of it with the cooperating resources employed in that industry. When, on the contrary, the addition of an increment of labor to the quantity of labor already in use in the economy operates primarily to reduce the relative production costs and selling prices of goods and services in the fabrication of which the labor factor is comparatively important, there will be an increase in the relative amount produced and consumed of such goods and services; or, because of the change in the cost and price structure, there may now be produced for the first time goods and services in which the labor factor bulks relatively large, and the production of which has not heretofore been undertaken because of the relatively high cost of labor. Here we have commodity-substitution rather than technical substitution; for the additional increment of labor is

<sup>29</sup> Hereinafter we shall sometimes use the term labor instead of the term population; for, although the two terms are not interchangeable, any finding for "labor" is readily convertible into terms of population, given conditions (vi) and (vii) described above.

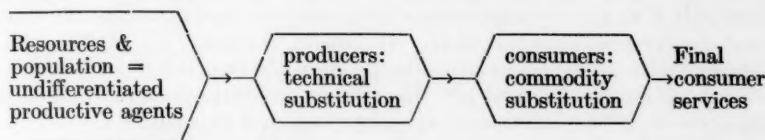
<sup>30</sup> The principle of convertibility is ignored here; it is discussed below.

<sup>31</sup> The phrase "additional increment of population" is intended to refer to any situation in which population grows faster than resources.

<sup>32</sup> It is assumed that the increment of population cannot be used in complete isolation from resources. (This assumption, although unnecessary, makes for greater ease of expression.) It is always assumed that sufficient time has elapsed, following the addition of an increment of population, to permit as much reorganization of production and as much adjustment of the economy to the increment of population as conditions of production and consumption permit.

absorbed primarily through the substitution, in the consumption and utilization budgets of the population composing the economy, of certain kinds (i.e., comparatively labor-absorbing) of goods and services for other kinds (i.e., comparatively non-labor-absorbing) of goods and services. The substitution that takes place consequent upon an increase in  $P/R$  will usually consist in a combination of technical and commodity substitution, with sometimes one form and sometimes the other predominating.

We may think of the unspecialized and (more or less) "original" agents of production as situated at one pole, of final consumer services as situated at the other, and of producers and consumers as the instruments by which undifferentiated productive powers are transformed into specialized consumer services. Thus:



The arrows indicate the direction of the substitution process. The two intermediate hexagons indicate that we must search in the patterns, respectively, of producer and consumer behavior, for the elements which either restrict or facilitate the processes of substitution.

In light of the analysis presented in Section I and given the nine conditions laid down in this section, it follows that the decline in per capita output consequent upon an increase in the ratio of population to resources will be governed by three circumstances; (a) the elasticity of substitution of labor for the resources with which it is jointly used in productive processes throughout the economy; (b) the ratio of the marginal product of labor to that of resources ( $P_m/R_m$ ) prevailing at the time population increases; and (c) the extent to which the population of the economy already has grown beyond the optimum number at which per capita output is at a maximum. The influence of circumstance (b) is conditioned by circumstance (a), since (*ceteris paribus*) changes in  $P_m/R_m$  are conditioned by the past and the present magnitude of the elasticity of substitution. The importance of circumstance (c) also turns on the magnitude of  $S$ . If some of the nine conditions laid down above are relaxed and to the increase of quantity of  $P$  other product-augmenting forces are added, these forces may (*within limits*) either decelerate the rate of fall in  $P_a$  consequent upon population growth or more than offset the income-depressing influence of population growth; but they will not be capable of continually offsetting a continuing increase in population in a finite economic universe.

### III

In this section, we show that: (a) since resources are composed in part of population, their quantity may be augmented by converting population into resources; (b) that the convertibility of population into resources in the economy



as a whole is conditioned by  $P_m/R_m$  and by the industrial composition of the economy; and (c) that the rate of decline in this convertibility is conditioned by the elasticity of substitution of labor for resources in the economy as a whole.<sup>33</sup>

Given an economy in purely competitive equilibrium, the fraction of a representative unit of resources that may be derived from population through conversion is fixed by the fraction of its price (= cost = value) that is imputable ultimately to labor (or population). Suppose a representative unit of resources  $G_1$ <sup>34</sup> is produced under conditions such that 0.9 of its price (= cost) is imputable ultimately to labor and 0.1 to resources. Suppose that the corresponding proportions for resources  $G_2$  and  $G_3$  are, respectively, 0.75 and 0.25, and 0.1 and 0.9; and that still other proportions rule for resources  $G_4 \dots G_n$ . Evidently, given that other things are equal, in an economy marked by population growth the supply of  $G_1$  may be augmented with greater ease than that of  $G_2$  and with much greater ease than that of  $G_3$ . In general, the larger the fraction of a resource that is imputable to labor, the greater is the ease, *ceteris paribus*, with which labor can be converted into this resource and with which the supply of this resource can be made to keep pace with the growth of population.

The fraction of a resource  $G_1$  that is imputable to labor and therefore derivable from labor  $P$ <sup>35</sup> is governed by two circumstances: (a) the ratio  $P_m/R_m$  ruling in the economy; and (b) the ratio of labor  $P$  to resources  $R$  in the industry that produces  $G_1$ .<sup>36</sup> The rate of decline in this fraction is conditioned by the elasticity of technical substitution of labor for resources in the industry (or industries) responsible for the production of  $G_1$  and by the elasticity of demand for  $G_1$ .<sup>37</sup>

<sup>33</sup> Conversion of population into resources is desirable within limits because population and resources cooperate in production; it is possible in so far as resources are composed in part of labor (or population). Conversion would not be possible if all productive agents cooperant with labor were nonsusceptible of economic modification by man and were used only in their pristine state. But this is not the case. Virtually all production is joint, and virtually every productive agent which is used jointly with labor is analyzable into terms of the labor and resources which have cooperated in the creation of this agent. (Of course an agent by which economic production is conditioned is significant for the present discussion only if and when it is economically scarce and therefore capable of having something imputed to it.)

<sup>34</sup> It must be remembered that we are here concerned with resources, not with goods in general.

<sup>35</sup> In this section we continue the assumptions regarding conditions of production that were set down in Section II. For purposes of the immediate discussion, however, we suppose resources  $R$  to differ with respect to the degree to which they consist of labor. In Section IV we deal in detail with the matter of heterogeneity of resources.

<sup>36</sup> Let  $q_p$  and  $q_r$  be the number of units, respectively, of  $P$  and  $R$  being used in the production of  $G_1$ ;  $P_m$  and  $R_m$ , the marginal products in the economy as a whole per unit of  $P$  and  $R$ , respectively; and  $s_p$ , the share of a representative unit of  $G_1$  that is imputable to  $P$ . Then  $s_p = q_p P_m / (q_p P_m + q_r R_m)$ .

<sup>37</sup> When the elasticity of technical substitution of labor for resources is high in an industry, the rate of fall in marginal physical productivity of labor is low. When this elasticity is greater than the elasticity of demand for the finished product, the ratio of labor to capital increases more than when this elasticity of substitution equals or is less than the



The elasticity of the demand for  $G_1$  depends, in turn, upon the elasticity of technical substitution between  $G_1$  and the agents with which it cooperates in the productive process and upon the elasticity of the demand for the goods in the production of which  $G_1$  cooperates.

The fraction of the aggregate resource equipment of an economy that is imputable to labor and therefore derivable from labor will be high in proportion as this aggregate consists largely of individual types of resources predominantly imputable to labor and therefore derivable from labor. Accordingly, if the population of an economy is growing in relation to its resources, this population can ease its adjustment to the decline in the population : resources ratio by modifying its preference scales and increasing its relative consumption of goods in the production of which resources that consist largely of labor are relatively important.

In an economy marked by population growth it is technically easier, other conditions being given, to augment the supply of resources when the fraction of resources imputable to labor is high than when it is low; but, since other conditions do not remain equal, this technical ease tends to be counterbalanced by other circumstances. First, the population of an economy with a low resources : population ratio is not very free to shift its consumption to goods in the production of which resources consisting predominantly of labor are relatively important.<sup>38</sup> Second, the augmentability of any specific resource  $G_1$  is conditioned also by the degree of availability of the productive agents other than labor of which  $G_1$  is composed. Third, since the augmentability of resources in general is conditioned by the rate of saving (= investment) which in turn is governed by (among other things) the magnitude of per capita output (= income)  $P_a$  and sometimes by the rate of return on investment (= savings), it is difficult to elevate the resources : population ratio when this ratio is relatively low and the population is increasing. Given that other things are equal,  $P_a$  will be higher when the rate of population growth is low than when it is high,<sup>39</sup> while the rate of return on savings will be higher when population grows rapidly than when it grows slowly. Since the former force is the stronger,<sup>40</sup> resource formation per

elasticity of demand. See Joan Robinson, *Economics of Imperfect Competition*, pp. 258-60; also Kahn, *Review of Economic Studies*, I, 1933, pp. 75 ff.

<sup>38</sup> See Sections V, VII-VIII.

<sup>39</sup> It is assumed that population exceeds the optimum number.

<sup>40</sup> If we suppose the supply of savings to be positively correlated with the rate of return up to a given point and negatively correlated with it beyond this point, we must conclude that when population growth pushes the rate of return above this critical level, the rate of saving will fall. Here, for the sake of simplicity, we shall assume the correlation to be positive throughout. Since the psychic disposition to save at any given rate of interest is influenced, *ceteris paribus*, by the extent of the saver's property holding, and since this holding is likely to be low when the resources : population ratio is low, the correlation between rate of return and rate of saving is more likely to be positive at all relevant levels when the resources : population ratio is low than when it is high. Moreover, secular changes may shift the interest-savings function rightward and downward.

capita will be greater (other things equal)<sup>41</sup> when population is growing slowly than when it is growing rapidly.<sup>42</sup>

The convertibility of population into resources, it is evident, is governed largely, given an initial population : resources ratio, by  $S$ , the elasticity of substitution of labor for resources throughout the economy as a whole. For  $S$  reflects the influence of both commodity substitution and technical substitution, and it conditions the movement of  $P_m/R_m$ . Recourse to convertibility would be impossible if  $S$  were zero; it would be unnecessary if  $S$  were perfect. In general, convertibility is positively correlated with  $S$  and subject to the same limitations as is substitutability.<sup>43</sup>

In this as in the preceding sections our discussion has been couched in terms of a situation in which population has grown beyond the optimum and is growing more rapidly than the supply of resources. Our conclusions are easily adapted,

<sup>41</sup> Per capita income being given, the rate of saving is conditioned not only by the rate of return on savings but also by other circumstances which influence saving and spending habits both in the shorter and in the longer run. Among these circumstances must be included the effect exercised upon the individual's pattern of values and his attitude toward the future by the magnitude of his family. This effect may strengthen the will to save of an individual with family; but whether it increases this individual's absolute amount of saving depends on whether it increases his capacity to save (which is governed by both his will to save and his earning power) sufficiently more than to offset those increases in expenditure which necessarily accompany increase in family size. In the United States the relation between family size and the propensity to save is an inverse one; and there is little reason to suppose that the relation elsewhere is substantially different. See F. Lorimer and H. Roback, "Economics of the Family Relative to Number of Children," *Milbank Memorial Fund Quarterly*, XVIII, 1940, pp. 19 ff.; M. V. Jones, "Secular Trends and Idle Resources," *The Journal of Business*, XVII, No. 4, Part 2, pp. 35 ff.; also Eric Schiff, "Family Size and Residential Construction," *American Economic Review*, XXXVI, 1946, pp. 97-112.

<sup>42</sup> Here we are not concerned with the thesis that population growth increases both the average propensity to consume and the average propensity to invest, thus generating income and savings and making both per capita income and the rate of resource formation higher than they otherwise would be.

This thesis is of limited applicability, even on the assumption that there is a persisting tendency to the underutilization of productive agents, for which population growth may constitute a significant counterforce. For, since an economy is an essentially finite universe, the capacity of population growth to stimulate investment and savings must necessarily diminish as the limits of this universe are approached; and long before these limits are reached the adverse effects of a high population : resources ratio will swamp any such positive influence as population growth may exercise upon savings via the medium of investment.

The problems confronting an economy are functions of (among other things) population growth. Consequently, somewhat different policies are called for when the growth rate is low than when it is high. These policies cannot, however, imply that population growth is good or bad; such an evaluation must rest upon other foundations. On aspects of this problem see M. V. Jones, *op. cit.*; W. Fellner, *Monetary Policies and Full Employment*, A. R. Sweezy, "Population Growth and Investment Opportunity," *Quarterly Journal of Economics*, LV, 1940, pp. 64-79; George Terborgh, *The Bogey of Economic Maturity*, especially chaps. 2-6; also my "Population and Per Capita Income," *Annals of the American Academy of Political and Social Science*, CCXXXVII, 1945, pp. 188-90.

<sup>43</sup> See Section V below.

however, to a situation in which population is growing less rapidly than the resources with which it cooperates in production. In such a situation population growth operates to decelerate the rate at which the resources: population ratio can rise, thus depressing present and future per capita income. For productive power which might otherwise be transmuted into per capita income-raising productive resources is absorbed by the reproduction and rearing of *additional* increments of population and by the equipping of these increments with consumers' and producers' capital. Moreover, the rate at which depletable and nonreplaceable resources are exhausted is stepped up.<sup>44</sup>

## IV

The discussion in the preceding sections has been based upon the nine conditions stipulated in Section II. In this section we shall consider in Parts (a)-(e) the effects attendant upon relaxation of any one of the first five of these conditions. We shall not examine in detail the effects attendant upon a decrease in  $P/R$ , since these effects are, in general, the reverse of those attendant upon an increase in  $P/R$ .

(a) Suppose that we remove condition (v) and assume resources to be heterogeneous. If we merely postulate them to be qualitatively heterogeneous and assume further that the utilization of resources proceeds on the whole from superior to inferior grades, we get a faster decline in  $P_a$  than we would get if resources were qualitatively homogeneous; and this proposition holds whether there be one or several kinds of heterogeneous resources.

Of the circumstances which distinguish types of resources used jointly with labor, the most important for the present discussion is variation in augmentability through time. This variation in augmentability is traceable to variation in the augmentability through time of some or all of the elements of which the resources consist.<sup>45</sup> Resources may be analyzed into terms of their "original" elements, or they may be analyzed into terms of their less "original" elements (e.g., labor, land, natural resources, man-made equipment). In either case it is the augmentability of the elements composing a given kind of resource that regulates its augmentability.<sup>46</sup>

For the present it suffices for us to group resources  $R$  (i.e., the instruments used jointly with labor in economic production) in five classes ( $R_1, R_2, \dots, R_5$ ),

<sup>44</sup> See H. Bowen, "Capital in Relation to Population," *Social Forces*, XV, 1937, pp. 346-50. Nineteenth century economists were alert to this effect of population growth upon capital formation; e.g., see my "Pareto on Population," *Quarterly Journal of Economics*, LVIII, 1944, pp. 576 ff. See Section VII below.

<sup>45</sup> It is necessary to stress augmentability through time. If the supply of a resource for use is increased temporarily but at the expense of the supply available for use at a later period, there is no long-run increase in supply; there is merely an acceleration of the rate of depletion.

<sup>46</sup> In so far as the place of a given kind of resource may be taken by a substitute, the supply of the former is indirectly augmentable through substitution. Here, however, our concern is with direct augmentability, since indirect augmentability is reducible ultimately to terms of direct augmentability of the substitute.

ranging from the least augmentable to the most augmentable: (1) depletable and nonreplaceable natural resources; (2) nondepletable natural resources whose supply is essentially fixed; (3) land, expressed in terms of terrestrial space in which agricultural and other economic activities may and can be carried on; (4) natural resources which are replaceable and augmentable; and (5) equipment —i.e., machinery, buildings, etc. Since the number of kinds of resources in this world is much greater than five, and since nearly all kinds of resources vary in quality, the components of any one of these five classes will differ in kind and quality and yet resemble one another rather closely in direct augmentability.

Of the first ( $R_1$ ) of these five classes of resources the absolute supply is a diminishing quantity; and its increasing relative scarcity can be offset only in so far as population or resources  $R_2$ – $R_4$  can be substituted for it ( $R_1$ ). While the absolute physical supply of  $R_2$  is a fixed quantity, its economic supply may be increased within limits by substituting for it population or resources  $R_1$  and  $R_3$ – $R_5$ . The supply of land  $R_3$  as defined is comparatively fixed; but the physical supply of land as a situs for most economic activities that are nonagricultural in character may be increased by changing the pattern of industrial location and shifting other land to this use, while the supply of agricultural land may be maintained and even increased somewhat in effective quantity by recovering land theretofore inutile, by preventing erosion, etc., and by preserving and/or increasing the fertility of the soil.<sup>47</sup> Within limits also the supply of  $R_3$  may be increased indirectly by substituting for it labor and  $R_5$ . The supply of  $R_4$ <sup>48</sup> is directly augmentable, but only within limits, since its physical supply is conditioned by that of  $R_1$  and  $R_3$  in particular; it is susceptible also of some indirect increase through substitution. In an economy whose population is increasing,  $R_5$  is the most (directly) augmentable of the five classes of resources  $R_1$  –  $R_5$ , for  $R_5$  consists in greater measure than the other four of population which by definition is a growing factor;  $R_5$  also appears to be more augmentable indirectly than the other four, since population appears to be more substitutable for  $R_5$  than for  $R_1$  –  $R_4$ . The physical augmentability of  $R_5$  appears to be limited principally by  $R_1$ .

Since both convertibility and substitutability not only diminish but are also subject to limitations, the combined augmentability of classes  $R_1$  –  $R_5$  is limited. The *indirect* augmentability (through substitution) of each of these five classes is limited both because the substitutability of population and the other four classes of resources for the class in question is a diminishing quantity and because the supply of the substitutes is ultimately limited. The *direct* physical augmentability of each of these five classes of resources is restrained both by (1) the tendency of the substitutability of any one factor for any other to fall, and by (2)

<sup>47</sup> In effect this is accomplished by converting into land, labor, and/or some of the other four resources (particularly  $R_1$  and some of both  $R_4$  and  $R_5$ ).

<sup>48</sup> In this class fall most products of organic growth as distinguished from minerals which fall largely in  $R_1$  and nonmineral power resources which fall in  $R_2$ .

the comparative fixity of supply of some of the constituent elements of some of the resources, which restricts convertibility.<sup>49</sup>

(b) If we relax condition (iv) and suppose the population factor to be heterogeneous, we encounter effects analogous to those which attended the relaxation of condition (v). Suppose population  $P$  to consist of five categories  $P_1 - P_5$  ranging from highest to lowest in terms of capacity for production. If  $P_4 - P_5$  increase relatively more rapidly than  $P_1 - P_2$ , the rate of decline in  $P_a$  will be greater than it would be if the population were homogeneous or if the rates of increase of all categories were the same. The greater the substitutability of members of inferior categories (say  $P_4 - P_5$ ) for members of superior categories (say  $P_1 - P_2$ ), the less will be the tendency for a relatively greater increase on the part of these inferior categories to increase the rate of decline in  $P_a$  above what it would be given a homogeneous population  $P$ .<sup>50</sup>

Because, in the shorter run, the overriding relation between any two categories of population is one of complementarity rather than one of substitutability, the tendency for a relatively greater increase on the part of inferior categories to push the rate of decline in  $P_a$  above what this rate would be, given a homogeneous population (or one in which all components are increasing at the same rate), is more pronounced in the shorter run than it would be if the overriding relation were one of substitutability. For example, if  $P_5$  increases

<sup>49</sup> When productive factors are heterogeneous and in effect multiple, direct substitution and conversion may have to give place to indirect and roundabout conversion and substitution. For example, it may be less economical to accomplish a given purpose by using factors 1 and 2 in appropriate combination than by combining factors 1 and 3 to produce 4, which is then combined with 2 to achieve the purpose in question.

<sup>50</sup> Differential natural increase may augment the cost of distributing labor among employments according to the marginal principle and may intensify the tendency to disguised unemployment, particularly when the over-all ratio of population to resources is relatively high. Suppose a number of employments  $E_1 - E_{10}$  are recruited predominantly from population category  $P_1$ . Then, if persons attached to  $E_1$  increase faster than do those attached to  $E_2 - E_{10}$ , and if the elasticity of demand for the products of  $E_1$  is not enough in excess of that for the products of  $E_2 - E_{10}$  to maintain the marginal productivity of labor in  $E_1$  at the level ruling in  $E_2 - E_{10}$ , we have disguised unemployment in  $E_1$ . This disguised unemployment may be corrected, *ceteris paribus*, by transferring  $P_1$  members from  $E_1$  to  $E_2 - E_{10}$ , or by adding the whole of new and as yet occupationally undifferentiated increments of  $P_1$  to the numbers employed in  $E_2 - E_{10}$  until the marginal productivity of  $P_1$  relative to that of other productive agents is the same in all ten employments.

As a rule disguised unemployment is greater in agriculture than in other employments since usually the rate of natural increase is higher in the agricultural population than in most segments of the nonagricultural population.

The disposition of the units of any given kind of productive agent among employments is governed by the action of entrepreneurs and also, in the case of labor, by the action of the labor factors. Accordingly, since nonhuman productive agents have no control over their disposition, and since presumably entrepreneurs are better judges on the whole than are the units of labor regarding where these units are relatively most productive, disguised unemployment of labor tends to be greater than does disguised unemployment of other agents of production. See note 26 above.

appreciably relative to  $P_1$  when the dominant short-run relation between them is one of complementarity, the productivity per unit of  $P_3$  eventually will fall appreciably, whatever be the over-all population : resources ratio; whence  $P_3$  (which in this case is a weighted average of the corresponding rates of the component categories of population  $P$ ) declines faster than it would if  $P_3$  were a substitute for  $P_1$  or for  $P_2 - P_4$ . But substitutability, like complementarity, is a function of time: given time for adjustment and the condition that other things remain equal, substitutability increases while complementarity diminishes with time. Accordingly, in the longer run (to continue our example) the substitutability of  $P_3$  for  $P_1 - P_4$  and/or for  $R$  increases (within limits) above what it was for the given population : resources ratio, and the initially depressive influence of the relative increase in  $P_3$  is somewhat reduced.

Since technological progress presumably is contingent upon there being an adequate relative supply of population categories  $P_1$  and  $P_3$ , relatively slow growth on the part of  $P_1$  and  $P_2$  operates, *ceteris paribus*, to slow down the rate of technological progress. And since both substitutability and complementarity between population categories are conditioned by the state of technology, these relations are affected by changes in the relative rates of growth of  $P_1$  and  $P_2$ . Whence, if it may be assumed that substitutability rather than complementarity is fostered by technological change whose primary purpose is cost reduction, it may be inferred that a decline in the relative magnitude of categories  $P_1$  and  $P_2$  slows down the forces making for substitutability.<sup>51</sup>

(c) When the population : resources ratio in an economy changes, the industrial composition of that economy also tends to change. For example, if this ratio increases, the relative price of labor falls and the forces of technical and commodity substitution are set in motion. Relatively resources-using industries the demand for whose products is elastic tend to contract while relatively labor-using industries the demand for whose product is elastic tend to expand.<sup>52</sup> In general, labor will flow into industries in which the elasticity of technical substitution of labor for resources is high and/or the demand for whose product is elastic; and resources will flow into industries in which the elasticity of demand for the product exceeds the elasticity of technical substitution of labor for resources.<sup>53</sup> These changes are consistent with condition (iii) that individual preference scales stay put.

It is possible, in theory, if condition (iii) is relaxed, for an economy to increase

<sup>51</sup> *Ceteris paribus*, technological change designed to reduce cost will tend to make for economy in the use of productive agents the outlay for which bulks large in aggregate cost and to stimulate the use of relatively inexpensive productive agents. Within the latter class fall productive agents which, because they are complements and their relative number has increased, have become relatively plentiful and cheap. See note 61 below.

<sup>52</sup> The change in the industrial composition of the economy consequent upon an increase in the population : resources ratio reflects, besides the combined influence of technical and commodity substitution, the effect of any change in income distribution occasioned by the fall in the relative price of labor and the increase in the relative price of resources.

<sup>53</sup> E.g., see Robinson, *Economics of Imperfect Competition*, pp. 258 ff.; Hicks, *Theory of Wages*, pp. 242-46.



its real income, given some population : resources ratio, by making appropriate adjustments in the preference scales of the individuals composing its population. Demand functions must be adjusted upward for goods consisting largely of relatively abundant productive agents and downward for goods consisting largely of relatively scarce productive agents. If labor is the relatively abundant factor, per capita output (= income) can be increased by the introduction of changes in tastes which cause the demand function for relatively labor-using goods to rise and that for relatively resources-using goods to fall. The change in tastes must continue the force of commodity substitution in the direction which it takes when, in the absence of such a change, the relative price of labor falls. In general, therefore, the income-depressing effect of population growth can be reduced in so far as the substitutability of labor for resources, together with its elasticity, can be increased through the modification of the tastes of the population in favor of relatively labor-using products and services.<sup>54</sup>

(d) Relaxation of condition (i) that the economy is closed may permit the substitution ratio between population  $P$  and resources  $R$  to be improved in one or both of two ways: (a) through net emigration; (b) through the establishment of trade with other economies. If there is a net emigration<sup>55</sup> of population, particularly (when the population is heterogeneous) of the inferior elements, per capita output  $P_a$  rises;<sup>56</sup> for, because of the increase in the ratio of resources to population, the substitutability of labor for resources rises.<sup>57</sup>

<sup>54</sup> It has long been noted that the productivity of labor is conditioned by the pattern of tastes. See A. Landry, "Une théorie négligée. De l'influence de la direction de la demande, sur la productivité du travail, les salaires et la population," *Revue d'économie politique*, XXIV, 1910, pp. 314, 364, 747, 773; also my *French Predecessors of Malthus*, chap. iv. In the text above this argument is generalized and it is shown that per capita output is conditioned, *ceteris paribus*, by the communal pattern of tastes. See also (i) in Section V below.

<sup>55</sup> Here we abstract from the fact that emigration may reduce the relative amount of employment (e.g., see J. Robinson, *Essays* pp. 75-77); or that, under certain circumstances, it may shift unemployment to other economies (see my *France Faces Depopulation*, pp. 201 ff.).

<sup>56</sup> It will be recalled that the actual population is assumed to exceed the optimum in number. If there is a net emigration of superior elements (say  $P_1$  and  $P_2$ ),  $P_a$  may fall despite the decline in  $P/R$ . Likewise, even though the aggregate population exceeds the optimum, a net immigration of superior elements may increase per capita output; it may also, if the influx of superior immigrants produces a change in the state of the arts, increase the magnitude of the optimum. E.g., see A. Plummer, "The Theory of Population: Some Questions of Quantity and Quality," *Journal of Political Economy*, XL, 1932 pp. 617-37.

<sup>57</sup> Even if emigration does restore some given more favorable population : resources ratio that once existed in a given country, it will not restore the same economic conditions and income level as were formerly associated with this population : resources ratio. For, in the interval separating the initial period and the period of restoration, the habits of consumption and the methods of production must have changed in consequence of the initial increase in the population : resources ratio. E.g., see A. Marshall, *Principles of Economics*, pp. 807 ff.; E. Rothbarth, "Causes of the Superior Efficiency of U. S. A. Industry As Compared With British Industry," *Economic Journal*, LVI, 1946, pp. 388-90.



The establishment of trade permits labor to emigrate by proxy in the shape of exports which consist in relatively large proportion of the labor (or kinds of labor) with which the populous economy is relatively well supplied.<sup>58</sup> In exchange for these exports this economy receives imports which consist largely of those resources with which it is poorly endowed.<sup>59</sup> Trade thus serves to increase the substitutability of labor for resources and, therefore, to augment per capita output. This substitutability declines, however, as the population of the exporting economy increases (with other conditions remaining the same) both because per capita physical output in the exporting industries tends to decline and because the terms of trade worsen.<sup>60</sup>

(e) Relaxation of condition (iv) and allowance for change in the state of the arts, organization, and innovation calls for no modification of the analysis of this and the preceding section. While an improvement in this state may, under certain conditions, adversely affect the situation of labor, and while it may diminish the elasticity of technical substitution of labor for resources, it increases output per unit input of labor and (sometimes) output per unit input of resources,<sup>61</sup> whence it operates to increase per capita output (= income). The extent to which such an improvement serves to increase per capita output depends, not upon whether the improvement is capital- or labor-saving, but upon the relative amount of productive power that is released,<sup>62</sup> and upon the

<sup>58</sup> As B. Ohlin notes (*Interregional and International Trade*, p. 42) M. Longfield (*Lectures on Political Economy*, p. 239) looked upon commerce as a substitute for emigration. James Steuart and other eighteenth-century writers seem to have drawn the same inference. These early writers did not clearly indicate, however, that trade, being only an imperfect substitute for migration, cannot increase *over-all* average income as much as can migration; or that trade almost always tends to raise per capita output in all participating areas whereas migration may affect it adversely in countries of immigration.

<sup>59</sup> The entertainment of foreign travelers by relatively populous countries also facilitates the exchange of relatively labor-using for relatively non-labor-using products.

<sup>60</sup> The less elastic the foreign demand (in real terms) for exports, the greater will be the tendency of the terms of trade to worsen.

<sup>61</sup> M. V. Jones (*op. cit.*, pp. 20-34; see also Fellner, *op. cit.*, pp. 79 ff.) presents data which suggest that capital input per unit of output has not risen and may have fallen. Labor input per unit of output has fallen for, as G. F. Bloom shows ("Note On Hicks's Theory of Invention," *American Economic Review*, XXXVI, 1946, pp. 83 ff.), labor-saving inventions predominate and will predominate so long as the outlay for labor forms a large fraction of total expense. See also G. T. Jones, *Increasing Return*. Concerning the influence of invention upon the relative and the absolute share of income going to labor, see Bloom, *op. cit.*, pp. 93 ff.; J. Robinson, *Essays*, pp. 129-36, and "The Classification of Inventions," *loc. cit.*, pp. 139 ff. See also A. C. Pigou, *The Economics of Welfare*, pp. 671-80. Whereas the elasticity of substitution may be altered by inventions, it is merely determined (in part) by those adaptations of technique to circumstances which are implicit in the given body of technical knowledge (see Robinson, *Essays*, pp. 134-35 n.)

<sup>62</sup> Rothbarth (*op. cit.*, pp. 385 ff.) attributes much of the comparatively high efficiency of American industry to the relative plentifulness of land and the relative scarcity of labor which characterized the American economy in the last century. These conditions stimulated the introduction of labor-saving equipment and gave rise to a social structure which "has put purchasing power in the hands of those who are ready to buy large quantities of standardised goods" which are easily supplied through efficient mass-production methods.

length of the period during which this release persists.<sup>62</sup> If the improvement reduces resource input per unit of output, or if it brings into the orbit of economic utilizability agents which theretofore have lain outside this orbit, it operates, *ceteris paribus*, to bring about a more sustained increase in output than it does if it serves merely or primarily to increase the present rate of use of resources whose supply is both depletable and nonreplaceable (i.e.,  $R_1$  and, in some measure,  $R_2$ ) and thus to diminish the supply that will be available at some future date.

<sup>62</sup> We suppose that the effect of the improvement is not counterbalanced by reduction in the fullness with which productive agents are used, or by a decline in the propensity to form capital. Moreover, since we have postulated a competitive economy, we may not suppose that the introduction of the improvement destroys barriers to the competitive allocation and use of productive agents and thus serves also indirectly to increase per capita output. (In the real world inventions, etc., play an important part in preserving competition).

## AN ECONOMIC INTERPRETATION OF WOMEN'S FASHIONS

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### I

"The pretty babes that mourn'd for fashion, ignorant what to fear," are with us now in far greater numbers than in Shakespeare's year. The "mystery" of fashion changes has fascinated not only economists and sociologists, social historians and cultural anthropologists, but also philosophers and moralists, poets, playwrights, and novelists. Many of the latter have either poked fun at the lugubriousness of fashion and the foibles of its slaves, or have denounced it as an evil force in the world. To Shakespeare, fashion was a "deformed thief"; to Robert Burns it was an "idiot painter." The literary allusions to fashion are legion, and the subject has attained the dignity of Biblical mention.

Many theories of fashion have been expounded. This essay does not attempt to cover the whole subject in its myriad ramifications but simply examines some economic aspects of fashion; it takes the phenomenon of fashion changes and holds it up to the light of economic theory, in order to see its multihued facets. Such an analysis is desirable for two reasons: as a *partial* attempt to explain fashion itself, and as an exploration in applied economic theory.<sup>1</sup>

To begin with, fashion and style are not synonymous, although most writers use these words interchangeably. With reference to clothing, style is any distinctive mode of tailoring, while fashion is the style prevailing at any given time. A style evolves slowly, and reflects the people's way of life; fashion is a chameleon, ever changing, never in vogue long enough to reflect basic tastes and habits. Frequent fashion changes artificially shorten the period during which a style prevails; thus fashion is a parasite on style. As Elizabeth Hawes puts it:

Style is that thing which, being looked back upon after a century, gives you the fundamental feeling of a certain period in history. Style in Greece in 2000 B.C. was delicate outdoor architecture and the clothes which went with it. Style in the Renaissance was an elaborately carved stone cathedral and rich velvet, gold-trimmed robes. Style doesn't change every month or every year. It only changes as often as there is a real change in the point of view and lives of the people for whom it is produced.

Style in 1937 may give you a functional house and comfortable clothes to wear in it. Style doesn't give a whoop whether your comfortable clothes are red or yellow or blue, or whether your bag matches your shoes. Style gives you shorts for tennis because they

<sup>1</sup> P. H. Nystrom's *Economics of Fashion* was written before the rigorous concepts of monopoly and competition were developed. This book is a valuable and interesting study of fashion from the eclectic viewpoint of cultural anthropology, psychology, and social history, and it brings out many facts about the business organization of fashion, but it contains little economic analysis and makes no attempt to explain fashion in the light of modern economic theory.

are practical. Style takes away the wasp-waisted corset when women get free and active.<sup>2</sup>

Hoop skirts, togas, hourglass figures are not in fashion now, but they remain distinctive styles and—like Hattie Carnegie's bustles—they sometimes come back into fashion through the process of adapting or reviving old styles with modern touches of detail. Clothing styles give the social historian some insight into the life of the people who wore them, as Anatole France realized. Two centuries hence historians may look back upon the mid-twentieth century and infer from the functional design of bathing suits, sports clothes, and the tailored severity of women's business suits, that ours was an age in which women won for themselves greater physical freedom and economic opportunity than our grandmothers had in the nineteenth century. This is a *style*. But the long waistline of one season compared with that of another season, the raising or lowering of skirts by two inches, will tell nothing of the life of the people. This is *fashion*. As Elizabeth Hawes says, style changes every seven years or so, and "any dress which isn't in style for at least three years isn't any good to begin with." It is our purpose to examine fashion and fashion cycles or changes, not style itself.

How, and why, do fashions begin? The ultimate causes of fashion are the subject of much speculation, some of it fantastic, some of it plausible. One must beware of monistic explanations. Veblén and others emphasized the role of conspicuous consumption and the desire for distinction through dress. Others attribute fashion changes to the desire for decorative dress to enhance sex appeal. "No fashion is ever successful unless it can be used as an instrument of seduction," according to James Laver, costume authority of the Victoria and Albert Museum in England.<sup>3</sup> This may explain decorative dress, but not the incessant changes. Then there is the restless and unending search for perfect beauty. Curiosity leads to experimentation with new costumes. In temperate zones, seasonal changes may accentuate the desire for fashion changes. Finally, there is the social and economic class structure. The rich, the bored, and those lacking in outside interests seek to distinguish themselves from the masses by dress, and succeed in doing so temporarily. The imitateness of the lower-income groups, and the desire of the garment industry to capitalize on a novelty, lead to imitations (and vulgarizations) of original designs, and deprive the "elite" of their distinction. Thus the *haute couture* must constantly evolve "new" fashions in order to continue to supply "exclusive" apparel for its clients. Incessant change taxes the originality of designers, who must then resort to adaptations of old styles.

## II

Profits from producing or selling fashion goods may be profits of monopoly, of innovation, or of risk-taking. Producers or sellers who can control or influence the trend of fashion—sometimes through fashion magazines which "predict"

<sup>2</sup> Elizabeth Hawes, *Fashion is Spinach*, p. 5.

<sup>3</sup> *Life*, March 24, 1947, p. 65.

what they have already decided to sell—and whose “creations” are not imitated, are largely relieved of risk and they receive monopoly profits, for their “exclusive” apparel sells at monopoly prices.<sup>4</sup> Even with imitations, sellers obtain profits of innovation as long as a new fashion remains exclusive. Eventually the “creations” of Hattie Carnegie, Valentina, *et al.*, are copied by the garment manufacturers on Seventh Avenue, New York, and these profits of innovation disappear. But by that time, still other “creations” are developed, and the profits of innovation may be permanent so long as the stream of new ideas does not run dry. Finally, those who can neither influence the fashion trend nor be among the first to introduce new designs, must anticipate the future demand. The manufacturer or seller who guesses correctly will gain profits which might properly be classified as a “reward for risk-taking,” while those who guess wrong may take losses on unsold inventory, markdowns, etc., and may also suffer from the wastes which result from hand-to-mouth buying, seasonal production, and small-lot production.

Simply because some manufacturers and sellers lose from fashion's gyrations, it cannot be said that business in general suffers from fashion changes.<sup>5</sup> Large-scale producers take added risks, and some lose, but some gain enormous profits. The imitativeness of the lower-income groups, fostered by fashion and advertising, creates a steady market for replacement sales of clothing long before the clothing being worn is used up. If some producers lose from fashion, their loss is not the result of fashion itself, but the result of an incorrect anticipation of future fashion trends. In this respect, manufacturers' losses from fashion are analogous to producers' losses from other economic risks. If manufacturers always lost, they would oppose fashion changes! It is true that if fashion gyrations were eliminated, one of the risks of business would be gone and there would be less loss, but there would also be less profit from heavy repeat sales of clothing and accessories. Ultimately, the real losers from fashion are consumers. Some businessmen lose; others gain. And fashion editors, designers, fashion magazines that sell patterns, and the large and growing clan of publicity organizations whose business it is to make toeless shoes smart this summer and iridescent hosiery next winter, all stand to gain from the fashion merry-go-round.

Frequent fashion changes are stimulated by producers and sellers in order to make people dissatisfied with their present garments and buy new ones long before the old ones are worn out. Sales volume is based largely on repeat sales. If a garment is durable and well made and will last five years, a fashion change which makes consumers discard it in one year destroys four-fifths of its utility

<sup>4</sup> For example, cotton house dresses, originally \$3.95, were sold for \$19.50 after Mary Lewis, then of Best & Company, promoted them as fashionable frocks. Roy Sheldon and E. Arens, *Consumer Engineering*, pp. 118-119. See also the case of ostrich feathers (p. 61), and seal skins (pp. 146-149).

<sup>5</sup> In an otherwise admirable discussion, Leland J. Gordon insists that “the only possible gainers from the artificial stimulation of fashion are a few specialists producing fashion goods. Large-scale producers manufacturing in anticipation of demand stand to lose as a result of capricious changes in fashion. . . .” *Economics for Consumers*, p. 131. This is not always so.

(assuming that its utility is the same each year; but see Section III, below). This puts a strain on the consumer's pocketbook, it reduces our scale of living, and it encourages a tremendous waste of economic resources. But fashion may have an even more insidious effect:

If the emphasis is to be upon fashion, and fashions must change rapidly, why then make a garment durable, well made, or of any intrinsic value? Why not work for an *effect* at a low cost, sell the garments quickly, and trust to their passing style phase to bring the customer back to the retailer for more "new" fashions before she has a chance to discover or a disposition to complain about the basic worthlessness of the purchase?<sup>6</sup>

Fashion gyrations may encourage some unscrupulous manufacturers to adulterate their product. They feel safe in making shoddy goods; in cutting costs by not allowing enough material for shrinkage or alterations; in saving a few yards of material per hundred dresses by skimping on yardage, causing seams to split; by using fugitive dyes, composition buttons which melt, and similar methods. Producers who suffer from cutthroat competition use fashion changes as a means to distinguish their product. They also try to beat the price of their rivals, not by more efficient production, but by diluting quality and durability, and they may succeed in this practice because the public has been taught to pay attention to fashion but not to inquire too closely about the technical composition of the materials. Indeed, part of the garment industry opposed the "Truth in Fabrics" bill (in 1938) because they feared that honest labelling would take women's attention from fashion and would make them buy more rationally.<sup>7</sup> When fashion does not lead to adulteration and reduced durability, it fosters premature replacement of apparel in order to stimulate sales volume. Elsewhere I have analyzed this business practice which causes obsolescence of clothing before it is worn out.<sup>8</sup> Perfectly good clothes are worn only a short time and then are discarded or left to hang unused in closets. Truly, "the fashion wears out more apparel than the man," as Shakespeare put it.

### III

Durable and semidurable goods such as clothing yield services of diminishing marginal utility, because of depreciation and obsolescence. An exception is the rental of clothing, i.e., the purchase of a single service, for a single occasion. As the good's services decline in utility, the consumer must decide when to discard and replace it. Now the utility gained by replacing a not yet worn-out article is not the total utility of the new article, but the *difference* between the total utility of the new article and the utility (or potential services) remaining in the discarded article.

<sup>6</sup> Margaret Dana, *Behind the Label*, a guide to intelligent buying, p. 104.

<sup>7</sup> "Nothing should be done that would take the woman's attention from fashion and direct it toward the technical composition of materials," said an industry witness before a congressional committee. *New York Herald Tribune*, May 12, 1938.

<sup>8</sup> P. M. Gregory, "A Theory of Purposeful Obsolescence," *Southern Economic Journal*, July 1947.



Elasticity of demand for, and the rate of replacement of, consumer goods is influenced by the price of the goods, the consumer's income, and the rate of depreciation and obsolescence. If the commodity is priced low, a consumer (with any given income) is warranted in replacing it earlier than if the price is high, for at a low price the marginal utility of the anticipated added services exceeds the marginal utility of money (i.e., exceeds the marginal utility anticipated from alternative purchases). The cheaper the good, the earlier it will be discarded and replaced, and the more elastic will be the demand for it, *over a period of time*. The richer the consumer, the lower is the marginal utility of money to him, and the earlier he is likely to discard goods and replace them. But since a dollar is worth more to a poor man, he should (rationally) use his existing goods longer before replacing them. Finally, wear and tear cause depreciation, while monotony, conspicuous waste, and, of course, fashion, all cause obsolescence. Even in the absence of wear and tear, it is usually claimed that long use of the same article is sometimes monotonous, and its utility will decline because people like change and novelty for its own sake. (This claim is evaluated in Section VI.) Also, in a pecuniary culture which stresses conspicuous display of wealth, people may lose prestige if they utilize the same good for a long time. These factors—largely outside the control of any individual or business firm—hasten the decline of marginal utility for durable consumers goods over a period of time.

But this discussion refers to goods discarded because of wear and tear (depreciation) and monotony and prestige factors (inevitable or "normal" obsolescence), and replaced by an *identical* good. Since fashion changes are influenced by business, they create deliberate or *purposeful* obsolescence of goods,<sup>9</sup> and induce premature replacement and much waste, even in the absence of wear and tear and such monotony and conspicuous consumption as is normal to most people.

Anything which arouses a want or desire without actually satisfying it seems to create *disutility* rather than utility. (Some goods, such as foods, arouse an appetite and at the same time satisfy it.) Psychologists tell us that, for normal people, tension is undesirable; satisfaction consists in the relief from tension. Fashion—and suggestive advertising, with which it is allied—makes people dissatisfied with their existing clothing, arouses desires and, if people lack the purchasing power to indulge their newly-created wants, sets up tensions which cumulate. Fashion and advertising are a gigantic burlesque show at which millions gape. Seeing new fashions temptingly and teasingly advertised—goods they can never hope to own, changes they cannot afford to keep up with—must set up a tremendous store of insatiety in the poor and the modest-income groups, an insatiety which probably contributes to the neurotic personality of our time. And fashion may destroy utility, not only for one, but for many. Just as becoming apparel is satisfying to all who behold the wearer, so a fashion change makes last year's apparel distasteful not only to the wearer, but also to her friends, who may be ashamed to be seen with her.

<sup>9</sup> *Ibid.*



If fashion changes reflected changing tastes and habits, then each season's fashions might be an improvement over the last and might possess more utility by being a closer approximation to our basic needs. But this would be so only if styles changed gradually and were not forced. Unlike an oil painting or a piece of sculpture, the new fashion is not preserved but is soon scrapped for another "creation." New fashions are not added to older ones; they displace them. If fashions changed in order to attain beauty in dress, the result should be a gradual approach to artistic perfection. But this is not the case. As Veblen pointed out in the *Theory of the Leisure Class*, the alleged beauty of the prevailing fashions is spurious, since none of them will bear the test of time. Among the Chinese and Japanese, among the ancient Greeks and Romans, and among the peasants of many European countries there have evolved fairly stable styles which many critics consider more artistic and more satisfying than the fluctuating fashions of modern industrial communities. Indeed, in copying or adapting them, modern designers either admit their intrinsic superiority, or else attest their own poverty of creative imagination. (The same criticism can be made of revival architecture.)

Under any definition of utility, frequent rotation of fashions destroys utility. If the utility is physical, then the changed fashion forces consumers to discard still useful garments. For people who are concerned with wearing the "right" things, utility based on social approval is immediately destroyed when the old garment loses social caste. And if the true function of apparel is to attract attention to the wearer, if utility is based on novelty, then every change in fashion destroys the attention-arresting features of the displaced garment. In the absence of frequent fashion changes, all people would wear the same clothes longer, and more people than today would feel appropriately dressed. Industry ought to provide a wide range of styles at any given time, in order to complement the great variety of ages, physical types, and personalities. But it is not necessary to change fashions every season in order to achieve variety. Stability of styles is not the same thing as standardization.

#### IV

Although there is intense rivalry in the production and sale of clothing, fashion itself is a pure monopoly element. Fashion and fashion changes result in monopolistic competition by differentiating the goods of rival sellers, and they create further market imperfections by playing upon and reinforcing consumer ignorance.<sup>10</sup> Let us first examine fashion and differentiation.

Frequent fashion changes imply differentiation over time (temporal differentiation), as well as at a given time. Producers differentiate their goods from all rival brands at any one time, and each producer differentiates his own brand from the model he was selling last season. Sellers use distinctive styles in order to sell more goods than their rivals, or to sell at a higher price; they use fashion changes in order to sell more frequently than their rivals. (In the long run,

<sup>10</sup> For a more thorough treatment of the material in this section, see P. M. Gregory, "Fashion and Monopolistic Competition," *Journal of Political Economy*, Oct. 1947.

more frequent sales mean greater sales volume, but the two policies have different implications, as explained below.) In the first sense, a distinctive or "exclusive" fashion has the same economic effect as a brand or trademark: it distinguishes a particular product in the minds of buyers and creates loyalty to a particular producer or seller; it lifts the product out of the market for more standardized goods and creates a specialty which is relatively free from comparative judgment of price, quality, or durability. In this sense fashion is a pure monopoly element. In the second sense (temporal differentiation) the incessant emphasis on "newness" makes people dissatisfied with their existing clothing and leads them to buy more. Their dissatisfaction begot of obsolescence, they do not necessarily forsake their original buying source. In fact, a producer or seller who can point to the "latest" fashions has a selling advantage over his more conservative rivals, once people are induced to think of utility in terms of novelty and get into the habit of frequently replacing their clothes. The garment industry, the millinery, shoe, glove, and other industries which depend on fashion for sales volume recognize the importance of temporal differentiation. They employ "adapters," who are not true creators or designers but whose function is to evolve dresses, hats, or other articles of apparel that are "new." These fashions must be definitely earmarked for the current season and must have at least one talking point—if only a new name for an old color—easily recognizable as different from last season's fashions.

Since some of the moribund fashions are still displayed and purchased, current fashions may increase the range of differentiation, thereby confusing purchasers and impeding rational choice because the new and the old models are likely to differ only in petty details or in color. But in the long run, free consumer choice is more seriously restricted by fashion than by ordinary brand differentiation, because merchants do not generally carry what are considered "unfashionable" goods, even though people may want them. Many women who buy and wear the clothing in vogue rather than the clothing they want explain it by saying: "It's what everybody is wearing. The stores don't even show anything else." Thus fashion limits the genuine variety available to consumers; and by taking women's minds off price, quality of materials, and workmanship, fashion encourages wasteful buying. In the case of ordinary brand differentiation, moreover, a consumer will insist on his favorite brand—though better or less expensive ones are available—but he can at least buy several units at a time (e.g., a carton of "Chesterfield" cigarettes instead of one pack). But in the case of temporal differentiation, the high rate of obsolescence of fashion goods makes people reluctant to buy ahead. If styles were more stable, and fashion changes nonexistent, a prudent buyer could purchase several identical items at once (at a "sale," or out of season), thus saving money and the time and energy of shopping, as well as being able to use one while letting the others "rest" or be repaired or renovated. In some markets, for example that of automobiles, the loss from annual model changes is to some extent the gain of the used-car buyer, for heavy trade-in sales swell the stock of used cars and facilitate automobile ownership by lower income groups. But unfashionable clothes do not so readily

find their way to poorer people, either through charity or through secondhand clothing markets. The latter are not so highly organized as the used-car market, and, besides, there is some social stigma attached to wearing secondhand clothes. Last season's clothes are often discarded, or left to hang in closets. Thus fashion in clothing may create greater waste than style changes in automobiles, socially as well as personally.

In women's dresses, in 1939-40 the New York market produced 125,000 models; in dresses above \$4.75 wholesale, less than 300 dresses per model; below \$4.75, less than 1,000 dresses per model.<sup>11</sup> Some of these models are from earlier seasons; some are "new." Fashion as a brand or trademark (ordinary differentiation) accounts for some of the designs; but fashion as a device to stimulate obsolescence and premature replacement (temporal differentiation) must account for the larger part of this multiplicity of models, for there could be great variety at any given time without so many models, if a "new" set were not "created" every season.

Many writers attribute the excessive number of models to design piracy, and urge the passage of legislation similar to that in France, to prevent and punish the copying of designs. This point is debatable. The two American attempts at legal design protection—the NRA garment industry codes and the Fashion Originators Guild of America (FOGA)—were both thrown out by the Supreme Court. Since standardized models have often led to cutthroat competition, producers and sellers rely on constantly shifting fashions in order to have a specialty which is removed from comparative judgment. Legal design protection would encourage further product differentiation and would make the market less competitive; for imitations, copies, and adaptations of "original creations" blur the sharp differences which are the essence of monopoly power in the area of fashion goods.

Nor does the entire fashion industry object to design piracy. Fabric manufacturers know that copying goes on all the time, and they realize that imitations boost the sale of their fabrics to garment factories and large department stores. The Paris couturiers are the display windows for the great French fabric manufacturers and are heavily subsidized by them. The manufacturer sells the material not only through the original designer, but also through the other firms which copy the model. In fact, fashion could not exist without imitations of high styles in lower price ranges.

Design piracy, like trademark infringement, would increase competition if the copy were a perfect one, for it would prevent monopoly profit from an "exclusive" design and would rapidly dilute the profits of innovation.<sup>12</sup> But in the garment industry the copy is seldom perfect; it is usually a vulgarization of the original, often frankly called a "copy" or "adaptation" and sold to a different income group. The *haute couture* prepares originals for the rich, while the garment industry capitalizes on the imitative tendency of the lower income groups and taps a

<sup>11</sup> M. D. C. Crawford, *The Ways of Fashion*, p. 16.

<sup>12</sup> Cf. Edward Chamberlin, *The Theory of Monopolistic Competition*, Appendix E, "Some Arguments in Favor of Trade-Mark Infringement and 'Unfair Trading,'" pp. 218-222.

different segment of the demand curve by emphasizing price appeal as well as (an often superficial) "style appeal." This is not the same as attempted trademark duplication, through which a new firm tries to tap the same market in the same price range and to huddle under the umbrella of "goodwill" built up by the original firm through sustained advertising.

Where the customer is a poor judge of quality (for example, where rational buying requires technical knowledge or a highly developed esthetic sense), producers—by sheer propaganda—can sell inferior goods at high prices. The public is told that each season's fashions are new, different. But they are not genuine innovations; if they were, there would be some sense in the public's reliance on the tastes of "fashion leaders." The ignorance of consumers in the area of fashion is fostered by businessmen and copywriters who insist that fashion is a "mystery" which only the elect can understand. Now there is nothing mysterious or esoteric in designing clothes that are truly attractive, functional and useful. If businessmen were interested in genuine style and quality the public would not be so bewildered and misled; they would not confuse novelty with utility. In the area of fashion, as in many other industries, businessmen are generally lacking in imagination, social vision, and daring. They rarely create an entirely new style; they simply vary an existing one. They seldom experiment with very low prices; they simply cut prices a little, or not at all, and trust to the forced obsolescence of goods to stimulate repeat sales in a stable price range. Most sellers would rather not cut prices, would rather not compete in price or quality; instead they use all the tricks of fashion to gain customers.

Fashion is intimately related to waste in production and consumption, to seasonality in production and excess plant capacity, to the business cycle, to advertising and the maturity of industry, and through all of these, fashion changes impinge directly on consumer welfare. By requiring highly specialized equipment, changes in dies and patterns, etc., fashion obstructs diversified production and reduces the mobility of investment. A sudden fashion change may make valuable equipment such as dress patterns or shoe lasts worthless. By requiring hand-to-mouth buying of materials, small-lot production, excessive inventories, markdowns of unfashionable goods, and by causing a host of other production wastes, fashion keeps prices too high in most cases, and wages and profits too low in many cases. Lack of space prevents further discussion of the wastefulness of fashion, which I have treated more extensively elsewhere.<sup>13</sup>

Frequent fashion changes imply the absence of genuine or workable competition. If clothing styles were stable, sellers' rivalry would take the form of price cuts or improved quality, or both. Producers would charge less for the same product or would sell a better or more durable product for the same price, and all selling rivalry would be reducible to price competition. Most so-called "quality competition" in the area of fashion goods is really an attempt to stimulate sales without reducing prices and without improving the product. "New" fashions seldom change the product; they change the mind of the buyer, they make her

<sup>13</sup> Gregory, "A Theory of Purposeful Obsolescence," *loc. cit.*

dissatisfied with her existing clothes, which therefore become prematurely obsolete. Emphasis on shifting fashions is an attempt to remove the product from comparative judgment of price, quality, and durability, and to create a specialty which will not have a host of imitators to share in the profits of monopoly or the profits of innovation. (When sellers are few—as in the automobile industry—they fear that their rivals' retaliation will cause a price war; hence annual style changes replace price-cutting.) In general, fashion gyrations are relied on to maintain sales volume by frequent replacements in the same income groups instead of by price reductions to stimulate sales to lower income groups. Thus fashion is employed to avoid price competition; it is a variant of monopolistic competition and (in some industries) of oligopoly. Finally, by playing upon and reinforcing consumer ignorance; by providing the shadow instead of the substance of variety and consumer choice; by taking the buyer's mind off price, materials, workmanship, and durability; by encouraging waste in production; by preventing the independent development of the public taste; by getting the public in the habit of following self-appointed fashion arbiters instead of relying on their own esthetic values or those of disinterested artists or designers; by substituting *ars gratia pecuniae* for *ars gratia artis* or *ars gratia populi* fashion intensifies imperfect competition.

## V

Unequal distribution of income is one of the recognized causes of fashion gyrations, for markets would not become saturated so soon, and there would be less incentive for forced fashion, if the poor had greater purchasing power. But in this section we are interested in the effects of fashion on people of various income levels. Who suffers most from fashion changes? Some writers maintain that the poor, especially the working classes, do not lose as much from fashion as the middle classes do, because working clothes are functional and the poor do not need to keep up with the latest fashions. This may be true of overalls, uniforms, and special attire designed for particular types of work, such as factory employment, farming, or domestic service. But the very spirit of most fashions makes functional design difficult, for most fashions are designed in relation to women who lead lives of leisure; few of them are conceived in relation to the everyday lives of the masses. Very little advertising space is devoted to showing clothes designed especially for working girls, and the clothes which are available to them are poorly adapted to office work or most other employments.

The great in-between classes of American women, neither rich nor poor, with some money to spend but none to waste, are said to suffer most from fashion.<sup>14</sup> If this is true, it may be because middle class women attach more importance to social approval through dress than do poor women. Or, if poor women would also like to wear the latest fashions, they simply cannot afford to. Thus the poor may not waste as much money as the middle classes, through fashion changes, but if their desire is unrequited, they may lose more from fashion psychologically, as a result of frustration. It is true that some people lead a

<sup>14</sup> For example, Dana, *op. cit.*, pp. 108-9.



bohemian existence and pay no attention to fashion. This may be because they are poor, or it may result from a desire to husband their time and energy for more important activities of a creative nature. It is impossible to prove what class suffers most, but the following generalizations are probably valid. Except for some kinds of working clothes, which are fairly functional, the poor, who can afford it least, may suffer most from fashion changes, especially since emphasis on novelty is often at the expense of quality and durability; the rich, who can afford to discard unfashionable clothes and can have their clothes made to order, certainly suffer least; while the middle-income groups probably suffer in proportion to their desire to emulate the rich and to distinguish themselves from the masses. This may be one index of their middle-class status. In countless advertisements business teasingly dangles "new" fashions before the eyes of people who lack any kind of serviceable clothes. The poor, like Moses, see the Promised Land but do not enter.

Men suffer less from fashion than women do, and poor men, working men, suffer less than working women. Women in all walks of life seem to attach more importance to fashion than men do. As Elizabeth Hawes says:

It is the prerogative of the working man, the lower class guy, to wear no collar and no tie. He may go without a hat if he likes. He can wear loose, unpleated blue jeans. He can show his suspenders if he wants. He can go shirtless in the hot summer, the straps of his overalls barely covering his hairy chest. . . . He is not admitted to the best clubs, nor even allowed to ride up in the elevator of the Squibb Building without a coat. . . . But he has nothing to risk by being comfortable.

His boss will not look askance if he turns up in sandals in the summer. He will not be fired for choosing to wear no collar to work.<sup>15</sup>

Whereas women of all classes seek variety and incessant change, men's clothes are more standardized and stable. (They may also be less comfortable, but here we are interested in fashion changes, not in intrinsic suitability of clothes.) The only difference between the evening suit of a millionaire and that of an office boy is in the quality of materials used. Some people believe that men's clothes are less variable than women's because men are largely engaged in earning a living and have so little time to indulge in conspicuous consumption that they put the burden on women, who have more leisure. But this theory may be questioned, for working women take at least as much pride in clothes as nonworking women do. It is interesting to note that, in men's clothes, changes toward greater comfort generally come from the working men and slowly—oh, so slowly—influence the middle and upper classes; while in the case of women, the changes come (more rapidly) from the top of the economic and social hierarchy.

We must also consider the age distribution of the population. The American population is aging. From 1930 to 1940 the average age increased  $2\frac{1}{2}$  years, and the trend continues. Will this encourage or discourage the desire for novelty? Are older (wiser?) people less likely to be influenced by fashion and more likely to insist on stability? Certainly, tastes become more settled with

<sup>15</sup> Hawes, *op. cit.*, pp. 324-5.



age, older persons tend to have a larger percentage of their income taken up with commitments, and after years of experiment one finds the styles which are most satisfying to him. Young people may welcome frequent fashion changes, which give them a chance to experiment and still be like everybody else. Ruby Turner Norris says:

As persons grow older, it is often said that they become 'fixed in their ways.' This means that more of their total income has been satisfactorily allocated in habitual ways, leaving less for the experimental new developments which change taste patterns. Also the mental effort of choice and the physical effort of shopping become more onerous with advancing years. Very aged persons seldom add or substitute a single new good or brand during a year, unless forced to do so by changing incomes. For the aged, often, income is in the period of contraction and this in itself tends to cut out the experimental residue. Because of the possession of typically increasing income, lack of experience, and the mental and physical vigor necessary for choice, . . . the younger income recipients make more deliberate choice between alternative consumption goods than older income recipients.<sup>16</sup>

To a large extent, fashion advertising is addressed to the young, but this is not always the case; some fashions are promoted for middle-aged people who seek a more youthful appearance. Moreover, as one grows older, one gets in the habit of expecting and following changing fashions. And some young people, such as college girls, are, temporarily, able to ignore fashion changes because they can achieve a feeling of security within their group simply by wearing comfortable sweaters, skirts, and moccasins, or other clothes approved by their peers, and therefore partaking of the nature of a campus uniform. Their independence of fashion is similar to that of the nun, or member of an order, but it is only a group independence, for it imposes on the individual a uniformity as tyrannical as that of fashion.

Fashion changes more rapidly in a democracy than in a caste society where the masses are restricted in purchasing power and in social position. And fashions change most frequently in time of great social upheaval, such as war or revolution. For instance, in the two years from 1784 to 1786 French fashions in women's hats changed 17 times.<sup>17</sup> Gina Lombroso states the matter admirably:

Woman's clothes acquire stability when times are such that social conditions are fast and rigid, when it is not possible to pass abruptly from one class to another. When woman's position is stable her costume becomes almost invariable, as in religious or charitable orders, where her position is not affected by her appearance and where she can assert herself by other means than by her clothes and jewels.

But when society is more or less in upheaval (as was the case during the French Revolution) her clothes change perpetually, no matter how poor she may be or how trying are political conditions. When woman's position is unstable and there is a possibility for her to pass easily from one class to another, her costumes vary incessantly, as she changes banner and coat of arms.<sup>18</sup>

<sup>16</sup> Ruby Turner Norris, *The Theory of Consumers' Demand* p. 113.

<sup>17</sup> Frank A. Parsons, *The Psychology of Dress*, p. 211.

<sup>18</sup> Gina Lombroso, *L'Anima della Donna* (translated as *The Soul of Woman: Reflections on Life*), pp. 83-84.

The influence of war on fashion is two-sided. War, with its insatiable demand for men and materials, creates a condition of universal scarcity and at the same time swells the purchasing power of large groups in society. Moreover, the heavy backlog of deferred demand tends to exceed the supply of clothes in the immediate postwar period. The resulting sellers' market, with no need to stimulate sales volume, ought to minimize the influence of fashion during war and postwar years. In wartime, social pressure and scarcities tend to reduce conspicuous consumption by the wealthy and emulation by the poor and middle classes. Durability, comfort, and simplicity are emphasized, and distinction is sought in direct or indirect social service, or its appearance; in a wartime economy, the pecuniary canons of taste are temporarily weakened.

But in another sense, war strengthens the hand of fashion, which adapts itself to the wartime psychology. Civilian apparel and accessories use the wartime motif and, except for government restrictions on materials, such as CPA's Order L-85, fashion is stimulated by war. For war brings new ideas, breaks down old customs, and is an ally of rapid change. Even during a war, postwar style changes are planned and are hinted at in advertisements. Wartime restrictions cause the public to overemphasize novelty and change when these restrictions are finally lifted. Once the custom has been established, each firm considers frequent fashion changes necessary as an advertising device to maintain its market position. And the wartime development of new fabrics of great durability, to be put on the market after the war, increases the reliance on fashion to stimulate replacement sales. Moreover, by getting people in the habit of prematurely discarding clothes, fashion intensifies wartime shortages, thereby delaying conversion of plants to war production, and later, by inducing a buying spree, it fans the flames of postwar inflation.

## VI

From an economic—and probably from a social and psychological—viewpoint, there is little to be said in favor of fashion. Nevertheless, we can appreciate the wisdom which Gina Lombroso expressed when she said that the enormous stress which women lay on everything pertaining to clothes and the art of personal adornment is connected with the tendency to crystallize sentiment into an object.

Clothes constitute part of a woman's personality as determined by tradition and sanctified by religion. Woman symbolizes every important event in her life, every important feast in her religion, by a special dress. The temptation of dress is the last step in the ceremony to which the novice has to submit before entering the cloister. The memory of the gown which she, too, might have worn, was the strongest temptation that assailed St. Catherine before she took her solemn vows—a gown embroidered with gold and stars like those her sisters had worn, which her grandchildren would have gazed at with eyes filled with wonder and admiration.

\* \* \* \* \*

A jewel, a beautiful gown mean to a woman what an official decoration means to a man.

If woman's clothes cost the family and society a little time, money and activity, they allow woman, independently of lies and calumnies, to triumph and come to the fore outside of man's world and competition. They allow woman to satisfy her desire to be the first in the most varied fields by giving her the illusion that she is first, and at the same time enabling her rival to have the same illusion. Clothes absorb some of woman's activity which might otherwise be diverted to more or less worthwhile ends; they give woman real satisfaction, a satisfaction complete in itself and independent of others, and I think that under present conditions at least, they constitute a safety valve which saves society from much greater and more dangerous evils than those which they cause.<sup>19</sup>

The truth of these observations lies in their emphasis on clothes which are really beautiful and distinctive. But fashion is not primarily concerned with beauty; and fashion connotes uniformity, not the individuality so cherished in our society and so artfully suggested by the copywriters. Many people who follow fashions rigorously believe they are following their own inclinations; they are unaware of the primitive tribal compulsion, and this is true of fashions in manners, morals, and literature, as well as clothes.

Most writers—even stern critics of fashion—assume that the desire for novelty and change in clothes inheres in human nature. If this is so, then businessmen can truly claim that they are simply meeting a deep-seated public need. But this explanation assumes too much. There is a general desire for novelty and change, but it need not express itself in our apparel. Dress is simply an easy way for otherwise undistinguished people to distinguish themselves, or to have the illusion of distinction. We do not seem to tire of living in the same house, listening to the same great music, enjoying social intercourse with the same old friends. In fact, we grow more attached to certain possessions through long use, for example, houses, pipes, and even some articles of clothing. The so-called monotony of wearing the same styles a long time does not really flow from inadequacies in the clothes themselves. The constant desire for novelty in clothes (never to be confused with beauty or variety) flows from boredom and lack of more genuine goals in life than merely impressing people or courting social approval through externals such as dress. It may also stem from absence of an integrated personality, from monotony of ideas, and from personal and social frustrations. Fashion changes are thus a symptom of intellectual, emotional and cultural immaturity. The subtle insinuations of the fashion industries lead people to believe that newer fashions in clothes will solve their problems. But they do not, will not, cannot solve our problems. Whence, change is incessant. Canny businessmen know that people seek an easy escape from personal inadequacies or from the slings and arrows of outrageous fortune. So they build a folklore of fashion; they invest goods with subjective qualities which they cannot possess, and prescribe their wares as a panacea, a sedative, an elixir. Failure in the economic arena, love unrequited, confusion in a chaotic world—all these lead people to fashion's balm. Come unto me all ye that are heavy laden, and I will give you—something “new.”

<sup>19</sup> *Ibid.*, pp. 82, 83, 85.

In the absence of fashion changes, people would grow accustomed to using their clothes a longer time, and their desire for change and novelty would express itself in other fields—perhaps in other goods, perhaps in absorbing activities, perhaps (I hope) in the world of ideas, which offers an amazing variety to tempt the most jaded palate. As our culture is now constituted, monotony does appear to lie behind most fashion changes, but this monotony is not natural. Business has a vested interest in promoting new fashions and in thereby intensifying the monotony of existing styles. Consumers are ignorant, gullible, and full of vanity, but when we hear businessmen say they must adapt their production and advertising to irrational consumer behavior, we seem to hear Aesop's wolf complaining of the lamb.

The social disadvantages of fashion are many, and, like other social institutions, there is room for reform without going to utopian extremes. It seems to me that he who would look upon the face of Fashion and keep his balance must have a saving grace of humor. Only our laughter at Charlie Chaplin's antics saved us from tears over his all-too-human predicaments. Lacking this ingredient, reform becomes a demand for repression, the true moralist is silenced, and the shrill small voice of Mrs. Grundy is heard in the land.

## INDUSTRIAL CONCENTRATION AND TRADE BARRIERS

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Nearly ten years ago the Temporary National Economic Committee made a thorough investigation of the concentration of economic power in the United States. One part of the research work, for which the writer was responsible, involved a study of the relation between industrial concentration and tariffs.<sup>1</sup> That relationship continues to be an important problem.

In a reexamination of the relation of industrial concentration and trade barriers, the main findings of the TNEC monograph are first briefly summarized. Next, an attempt is made to estimate changes in industrial concentration since 1937, especially the influence of the war. And, finally, the probable effects of a substantial reduction of the United States tariff on imports and domestic prices for industries of high concentration are indicated. The feasibility of tariff changes is also briefly noted.

The tariff has been called the "mother of the trusts," but the TNEC study did not substantiate that broad statement. In some instances the relationship seemed quite remote, distant cousins perhaps, and occasionally the tariff restrictions apparently followed the establishment of trusts and monopolies. An explanation of monopolistic developments in the United States economy includes many other factors, such as patents and restrictive licenses, secret processes, increasing scale of production, technological changes, and ownership of natural resources.

The TNEC study was based on a representative sample of 1807 products taken from the Census of Manufactures for 1937. It included 14 of the 16 industrial classifications of the census (printing industries and railroad workshops excluded) and approximately 100 of the 350 industries in those classes. The total value of the products included was \$29,506,000,000, or slightly more than half of the value of all products in the 14 classes of the census. About one-third of the sample was classified as a high concentration group, that is, four companies or less supplied 75 per cent or more of the total value of each product. With regard to tariff status in 1937, only 2.5 per cent of the sample was free of duty, but many of the duties on imports were not highly restrictive. A classification of the sample according to three industrial concentration groups (high, intermediate, and low) and the restrictive effects of duties indicated that there was no close connection between high industrial concentration and restrictive tariffs.<sup>2</sup> Duties were apparently restrictive for only 31 per cent of the high-

<sup>1</sup> TNEC, Monograph No. 10, *Industrial Concentration and Tariffs*.

<sup>2</sup> *Ibid.*, pp. 8-9. The three concentration groups were: 75% or more of the output supplied by four firms or less; 50 to 74% of the output; and 49% or less of the output.

concentration group; for 60 per cent of the low-concentration group. Further analysis of the high-concentration group, especially with reference to monopolistic elements, was necessary in order to clarify the results.

A group of 317 products, which was 90 per cent identical with the high-concentration class of the large sample, was examined in more detail and in part over a long historical period. Almost 4 per cent of the products was free of duty and so factors other than the tariff accounted for the high industrial concentration in those instances. For example, the agricultural implement industry is a case of high industrial concentration associated with monopolistic elements, but not associated with duties on imports. Duties on approximately two-thirds of the products were probably not restrictive of imports. The shelter of transportation costs, the efficiency of domestic industries, the lack of substitutable imports and similar conditions were largely responsible for the nonrestrictive character of these duties. In a few cases the duties were ineffective because of the international monopolistic character of the industry. For the other third of the dutiable products in the high-concentration group, the duties were restrictive and in most instances (28 per cent of the dutiable products) removal or substantial reduction of duties could be reasonably expected to aid materially in the restoration of competition in the domestic market. Tariffs on these products probably were not the cause of monopolistic developments, but they certainly facilitated monopolistic practices.<sup>3</sup>

Nearly all of the products were analyzed only with reference to tariff history since 1913 and to trade and production status in 1935 and especially in 1937. Some of the tariffs may have been more directly related to monopolistic developments in earlier times. A few products, selected at random, were studied from a developmental point of view. The domestic gypsum industry, for example, expanded its output rapidly after 1898, partly because of a new demand for its products, and partly because of the peak of restrictions on imports, which was reached in the Tariff Act of 1897. This phase of the industry's growth was accompanied by a sharp increase in industrial concentration. Although the duties on gypsum products are no longer as significant as in the early days of the industry's development, they probably facilitate monopolistic practices.<sup>4</sup>

Early concentration trends in the flat glass industry seemed to be largely the result of efforts to combine horizontally independent producers into one company without changing substantially the scale of production in any one plant. Tariff protection by restricting severely foreign selling in the domestic market probably stimulated appreciably the early combination movement. Imports of flat glass have been subject to duty since the passage of the first tariff act in 1789. Later, when the transition from hand processes to machine processes became more nearly complete, concentration occurred largely because of the economics of

<sup>3</sup> *Ibid.*, pp. 10-11.

<sup>4</sup> *Ibid.*, p. 41. U. S. Gypsum, National Gypsum, and Certain-teed Products are the three largest producers.



large-scale production and the use of patents. Tariff protection thereafter probably facilitated monopolistic practices.<sup>5</sup>

The domestic borates industry, on the other hand, is an example of a high degree of industrial concentration in which tariffs were apparently of minor importance. Imports of crude and refined borate materials were subject to high duties from 1883 to 1913, but the single producer of the period began operations in 1870. Ownership of excellent mineral deposits and, later, financial resources which were international in scope accounted largely for this development. The other main producer entered the industry in 1913, using lake brines for the production of borates and potash. For several decades the industry has been essentially on an export basis.<sup>6</sup> The duties probably no longer restrict imports. In the early period when they were restrictive, other conditions were responsible for the extreme industrial concentration of the borates industry.

An estimate of the changes in industrial concentration since 1937 must be based largely on important, but incomplete data presented in the reports of the Senate Small Business Committee and Federal Trade Commission.<sup>7</sup> No complete business census has been taken since 1939. The available evidence, however, indicates a substantial increase in industrial concentration. In terms of employment in manufacturing as a whole, a few of the largest firms (10,000 employees or more) accounted for 13 per cent of total employment in 1939, and for 31 per cent in 1944.<sup>8</sup> Increased concentration occurred mainly in the war industries, such as iron and steel, nonferrous metals, machinery, transportation equipment, chemicals, petroleum and coal products, and rubber products. However, the merger movement, which during 1940-46 involved the transfer of 1800 firms in manufacturing and mining to large corporations, affected some of the relatively small-scale, nonwar industries such as foods and textiles.<sup>9</sup> Although the importance of small firms in manufacturing declined, the relative number in each industry remained preponderantly large.

This change in the relative position of large firms is not unexpected. Because of the urgency and type of work during the war, the bulk of prime contracts was awarded to large corporations. About two-thirds of the \$175,000,000,000 of such contracts for 1940-44 was given to 100 large corporations. These corporations were also responsible for construction of 51 per cent of the privately financed war-production facilities, which were encouraged by favorable tax provisions, and for operation of 75 per cent of the value of the government-owned facilities.<sup>10</sup> Because of their location, their previous connection with large private corpora-

<sup>5</sup> *Ibid.*, pp. 54-5. Pittsburgh Plate Glass, Libby-Owens-Ford, and American Window Glass are the main producers.

<sup>6</sup> *Ibid.*, pp. 63-5. Pacific Coast Borax, and American Potash and Chemical are the producers.

<sup>7</sup> Senate Document No. 206, *Economic Concentration and World War II*, p. 3; Senate Document No. 17, *The Present Trend of Corporate Mergers and Acquisitions*, pp. 3-23.

<sup>8</sup> Senate Document No. 206, *op. cit.*, p. 25.

<sup>9</sup> Senate Document No. 17, *op. cit.*, pp. 6; 14; 16.

<sup>10</sup> Senate Document No. 206, *op. cit.*, pp. 29; 49.

tions, and the financial resources of the latter, these surplus plants tend to be purchased mainly by the large concerns. And finally, the war research program of the government is likely to contribute to industrial concentration for the next decade or two. About 70 per cent of the \$750,000,000 spent by the government on private research was received by the 100 largest corporations.<sup>11</sup> Many of the findings of this war research will be applied by the large corporations to peacetime production. In general the trend is probably towards greater industrial concentration and certainly there has been no appreciable diminution of concentration since 1937.

In view of this probable general trend in industry, as well as other recent economic changes both at home and abroad, the relation of tariffs and industrial concentration in the domestic economy may have altered greatly since 1937. No complete check is possible, as already indicated, but a reexamination of the products in the high-concentration group of the 1937 sample provides a tentative answer. Especially important as an index of any altered tariff-concentration relationship is the present status of the dutiable products in the high-concentration group of the sample. The products are those for which a reduction of duties as of 1937 was expected to aid in the restoration of competition in the domestic market.<sup>12</sup> This special group, as noted above, represented about 28 per cent of the dutiable, high-concentration products.

We shall first consider the nonwar industries.<sup>13</sup> With regard to foods and related products, sugar refining, meat packing, and corn products refining are the key industries of the sample, and they remain in approximately the same concentration and tariff position as in 1937.<sup>14</sup> Reduction of trade barriers would assist in offsetting monopolistic elements in the home market. In textiles and allied products concentration of production is decidedly less than in other main manufacturing groups. One key industry, however, rayon, sometimes classified with the chemical industry, is an exception. It is highly concentrated, and developments during the war, such as new uses for rayon and new production facilities, confirmed the dominant position of the three largest producers—American Viscose, duPont, and Celanese. Another highly concentrated industry of this group, the linoleum and felt-base floor covering industry, contracted during the war, but the concentration remains approximately the same. Lower trade barriers would improve competition in both industries.<sup>15</sup> In three other nonwar industrial groups, namely, wood, paper, and leather, the concentration-tariff relationship remains about the same as indicated in 1937. Lower trade barriers would probably improve moderately the competition in the home market.<sup>16</sup> And finally, the last of the nonwar industries included here is the

<sup>11</sup> *Ibid.*, p. 52.

<sup>12</sup> TNEC, *op. cit.*, pp. 13-28.

<sup>13</sup> Senate Document No. 206, *op. cit.*, pp. 209-92.

<sup>14</sup> Senate Document No. 38, *Post-War Imports and Domestic Production of Major Commodities*, pp. 565-78.

<sup>15</sup> *Ibid.*, pp. 1061-72; 953-6.

<sup>16</sup> TNEC, *op. cit.*, pp. 17; 20.

stone, clay, and glass products group. In this group the key products of the sample are flat glass and gypsum. Some diversification and expansion on the part of the two largest flat glass producers since 1937 reinforce their dominant position. Three of the largest gypsum firms also increased their facilities during the war. In both industries lower tariffs would probably offset monopolistic elements in the home market.<sup>17</sup>

In the category of war industries several important changes appear which may alter the concentration-tariff status existing in 1937. Giant firms in the industries producing basic chemicals and related products improved their relative position in the tremendous expansion of facilities during the war. Three firms (duPont, Allied Chemical and Dye, Union Carbide and Carbon) which are highly diversified are now clearly predominant in the production of dyestuffs, heavy chemicals, and industrial gasses. In these and related fields, more than three-fourths of a list of 238 products had 70 per cent or more of the output in the first six months of 1945 supplied by four firms or less.<sup>18</sup> Although industrial concentration of chemical production is greater now in the domestic economy, the weakening of international connections in the industry probably makes the reduction of tariffs more effective than formerly in restoring competition.<sup>19</sup> For instance, a court decision in 1941 enjoined American producers from existing price and quota agreements with the European nitrates cartel and the Chilean producers.<sup>20</sup> More recently an antitrust complaint was filed against the Alkali Associations and their member firms. Also, the Federal Trade Commission in July 1945 recommended that the Superphosphates Association withdraw from cartel agreements.<sup>21</sup> These legal actions, other proposals for curbing cartels, and the disruptive influences of the war may in conjunction with lower tariffs lessen monopolistic practices in the domestic industry.

Another expanded war industry with a higher degree of concentration than in 1937 is the rubber products industry. The four largest firms (Goodyear, Firestone, U. S. Rubber, and Goodrich) account for 92 per cent of the \$167,493,000 of expenditures on new rubber products facilities during the war, most of which was privately financed. This does not include synthetic rubber production facilities that were mainly operated by the same companies. Although the total number of firms declined from 1550 in 1939 to 745 in 1944, firms with more than 500 employees increased from 50 to 82. The reduction occurred entirely among the smaller firms.<sup>22</sup> Since the largest segment of the industry, tires and tubes, is on an export basis and is subject to very low duties on imports, the main increase in competition by way of tariff reduction is restricted to such products

<sup>17</sup> Senate Document No. 206, *op. cit.*, pp. 283-92; Senate Document No. 38, *op. cit.* pp. 282-8; 316-18; Senate Document No. 17, *op. cit.*, p. 21.

<sup>18</sup> Senate Document No. 206, *op. cit.*, pp. 186-193.

<sup>19</sup> TNEC, *op. cit.*, pp. 18-19. A reduction of tariffs would probably have been effective in offsetting monopolistic elements for about 38 per cent of the chemicals in the 1937 sample.

<sup>20</sup> Senate Document, No. 260, *op. cit.*, pp. 194-6.

<sup>21</sup> Edward S. Mason, *Controlling World Trade*, pp. 68; 70; 78.

<sup>22</sup> Senate Document No. 206, *op. cit.*, pp. 172-9.

as rubber boots and shoes.<sup>23</sup> This large branch of the industry is a key item in the sample study of 1937.

In the nonferrous metals industries the large firms made substantial gains during the war, but in one instance the degree of concentration was at least temporarily lessened. Copper and aluminum, two key products of the 1937 sample, illustrate these trends. Four large firms (Kennecott Copper, Phelps Dodge, Anaconda, and American Smelting and Refining) dominate the copper industry, three of which control most of the mining and three most of the refining. Nearly all of the copper and brass fabricating business is handled by subsidiaries of these firms. The American firms also own foreign mining properties. As a result of the increased demand for copper during the war, the big four improved their relative position in the industry.<sup>24</sup> Large foreign producers, however, are probably the low-cost ones, and consequently, elimination of the import excise tax on copper would improve competitive conditions in the home market, as indicated in the 1937 sample.

In the aluminum industry three firms instead of one now share in the production of alumina, aluminum ingots, and sheet, strip, and plate. Prior to 1941 the Aluminum Company of America was the only domestic producer of primary aluminum. With its Canadian affiliate, Aluminum Ltd., it controlled 64 per cent of the world's production of the metal. It also supplied the bulk of the principal fabricated products in the domestic market. During the war the industry grew to about six times its former size, but the government financed most of the expansion. However, at the peak of war production the Aluminum Company owned or operated about 96 per cent of the alumina and 91 per cent of the primary aluminum capacity. The Reynolds Metal Company was the only other important producer.

The postwar division of the industry among three producers stems from a decision in 1945 of a federal court of final appeal, which held that the Aluminum Company as of 1940 had a monopoly on production of ingot aluminum in violation of the Sherman Act. Possible dissolution of the company was deferred until disposal of governmental facilities was arranged. For a time the Aluminum Company was reluctant to release its patents on processes for crushing low-grade bauxite into alumina. This held up the disposal of government plants to other firms. Finally, the threat of dissolution induced the company to offer royalty-free licenses on the strategic patents, and all the government's primary aluminum capacity, which was economically located, as well as surplus sheet mills, were disposed of to other firms. The Aluminum Company now controls about half of the primary production of the industry; Reynolds and Kaiser the remainder. Its position, however, with regard to ownership of high-grade bauxite, shipping facilities, low power costs, and powerful Canadian affiliate is such that it is likely to continue to dominate the industry.<sup>25</sup>

Tariff changes present a doubtful solution, although in the early development

<sup>23</sup> TNEC, *op. cit.*, pp. 20; 186-90.

<sup>24</sup> Senate Document No. 206, *op. cit.*, pp. 96-104.

<sup>25</sup> *Ibid.*, pp. 105-09.

of the aluminum monopoly tariffs were important aids.<sup>26</sup> At present elimination of the low duty on bauxite might be of some assistance to the new competitors of the Aluminum Company. The same action, however, with regard to the duty on aluminum ingots would probably enable the Canadian affiliate of the Aluminum Company to sweep its competitors from the field. In addition to elimination of tariffs, the establishment of competition in the domestic market requires the development of public power projects with low-cost energy for domestic aluminum firms and dissolution of the Aluminum Company into a few efficient, but rival units.<sup>27</sup> And lastly, it should be noted that the Aluminum Company, on the basis of a consent decree entered in 1942, no longer controls any competitive threat to aluminum from the producers of magnesium. Prices of the two metals, however, were not greatly different after 1932, and the small production of magnesium in the United States prior to the war apparently was due largely to the difficulties of working the metal.<sup>28</sup>

Expansion during the war of the industries producing iron and steel products probably accentuated industrial concentration. Total steel-making capacity increased about 17 per cent, and the government financed a little more than half of the new capacity. The three largest companies (U. S. Steel, Bethlehem Steel, and Republic Steel) operated approximately two-thirds of the new capacity and owned a substantial part of it. Their relative gains are likely to be permanent and may be increased. Some of the new capacity, for instance, is "scrambled" in with the plants of the large firms in such a way that no other producer could use them effectively. A few of the independent plants constructed by the government, and operated by the large firms, may not be able to operate economically as independent units. A large share, moreover, of the new electric furnace capacity for the production of alloy steel is likely to be operated by one of the big-three firms. And lastly, the new technological developments during the war in the tin plate industry, that is, the shift from hot-rolling and hot-dipping to cold-reduction and electrolytic plating, enable the large integrated steel companies to supply most of the output. This development along with other favorable factors increases the predominate position of the two large manufacturers of tin cans.<sup>29</sup>

In the 1937 sample ten iron and steel products, or about half of the group on a value basis, were placed in the category in which monopolistic elements in domestic industries were partially mitigated by reduction of tariffs.<sup>30</sup> Tin cans were not included in this group because their cost of transportation, rather than duties, is a barrier to imports. For several of the products included in the group, such as semifinished rolled steel products, heavy steel structural shapes, and

<sup>26</sup> Charlotte F. Muller, *Light Metals Monopoly*, pp. 236-9.

<sup>27</sup> Bryant Putney, "Busting the Aluminum Trust," *The Nation*, March 8, 1947, p. 2 5.

<sup>28</sup> Mason, *op. cit.*, pp. 105-10.

<sup>29</sup> Senate Document No. 206, *op. cit.*, pp. 76-95. The American Can Company and the Continental Can Company are the large producers; Senate Document No. 17, *op. cit.*, pp. 18-19.

<sup>30</sup> TNEC, *op. cit.*, p. 23.

black plate steel, the reduction of duties will probably no longer have any effect on imports and domestic prices. The enlarged capacity of the domestic industry and its modernized facilities should enable it to compete in foreign markets in the sale of such products. Germany, Belgium-Luxemburg, and France were the main competitors in the sale of low-priced tonnage steel in the United States, and their ability to export is not likely to attain its former relative position. Imported steels, moreover, are generally not available in all of the sizes and grades required by domestic users; hence, the domestic producers of a full line of products may request full-line purchasing from their customers. In the future tariff duties may be restrictive for only certain types of high-priced special steels which are imported mainly from Sweden and the United Kingdom.<sup>31</sup>

In the production of agricultural and automotive machinery and related products, another group in the 1937 sample, the degree of industrial concentration probably increased slightly as a result of the war expansion of output. Four of the large agricultural machinery and tractor firms (International Harvester, Deere and Co., Allis-Chalmers, and J. I. Case) operated substantial amounts of government facilities which are suitable in many cases for the peacetime production of agricultural equipment. The three large producers of automobiles and trucks (General Motors, Chrysler, and Ford) also improved their relative position because of publicly and privately financed increases in capacity during the war.<sup>32</sup> As indicated in the sample study, however, tariffs have little or no influence on these industries. Agricultural implements and wheel-type tractors are free of duty. Passenger cars and trucks are subject to a very low duty, and its removal would not appreciably affect imports and the domestic price situation.<sup>33</sup>

The machine tool industry expanded rapidly during the early part of the war period and then contracted substantially in subsequent years. The industry remained, however, at nearly twice its prewar size. It also retained and probably increased its degree of industrial concentration.<sup>34</sup> Because of the numerous special types of machine tools, fewness of producers in many instances is apparently not associated with significant monopolistic elements. One spectacular monopolistic feature appeared in the use of tungsten carbide and related compounds as a hard tip on metal-cutting tools. The General Electric Company and its subsidiary, the Carboloy Corporation, pooled patents with Krupp in 1928 and monopolized the domestic market for cemented tungsten carbide until the basic patents were declared invalid in 1940. In the following year the Department of Justice brought an indictment against General Electric because of its price-fixing agreements. Apparently these objectionable practices were stopped in time so that the effects on American war preparations were negligible.<sup>35</sup> Elimination of the duty on tungsten carbide and tools tipped with it would help in a restoration of competition in the home market.

<sup>31</sup> Senate Document No. 38, *op. cit.*, pp. 346-53.

<sup>32</sup> *Ibid.*, pp. 136-8; 144-54.

<sup>33</sup> TNEC, *op. cit.*, pp. 23-4.

<sup>34</sup> Senate Document No. 206, *op. cit.*, pp. 142-3.

<sup>35</sup> Mason, *op. cit.*, pp. 102-105.



The last group of industries to be considered produces electrical machinery, equipment, and related products. These industries approximately doubled their capacity during the war period, and the expansion probably increased the relative dominance of the two largest companies.<sup>36</sup> In general, there has been, with one possible exception, no major change in the tariff-concentration status of these products. In the 1937 sample 39 per cent of the electrical items on a value basis were placed in the category in which reductions of tariffs would probably offset monopolistic elements in the domestic industries. The same general estimate applies to the present situation. A possible exception depends on the outcome of an antitrust complaint filed in 1941 with regard to incandescent lamps against General Electric, Westinghouse Electric, Corning Glass, and their subsidiaries and licensees.<sup>37</sup> Corning Glass and General Electric, using Corning-developed "ribbon machines," produce practically all the glass bulbs, tubing, and cane for use in manufacturing electric lamps. Their production and sales are apparently regulated by agreement. General Electric also produces all other parts required in lamp production. Westinghouse operates under a General Electric license in the production of incandescent lamps. These two companies account for about three-fourths of the incandescent lamp output. Other small companies usually operate under a General Electric license and depend upon it and Corning Glass for their component parts. In addition, the Department of Justice charges in a separate complaint that the General Electric-Westinghouse control of both incandescent and fluorescent lamp industries has retarded the use of the latter type of lamps. In the event that these complaints should terminate in greater competition in the domestic electric lamp industry, the elimination of tariffs on imports would be of minor importance. Production and prices in the home market would be such that imports free of duty would probably be nil.

As already stated there are several urgent reasons which support at the present time a liberalization of tariff policy on the part of the United States. One of these, as demonstrated in the foregoing review of recent industrial changes, is the salutary effect which such a policy would have on trends in industrial concentration, especially since World War II, and on the preservation of workable competition. A high degree of industrial concentration does not always constitute a serious monopoly problem, but nevertheless huge multiplant firms do not usually provide a sound economic case for tariff protection. The limitations, however, of tariff reductions as a remedy for monopoly in the home market are important. In many instances slight assistance in the preservation of competition can be expected from this source. There are other significant factors which contribute to and facilitate monopolistic practices. Many highly concentrated industries are on an export basis and many others have arrived at an output and price level which would stop nearly all imports in the absence of tariffs. Apparently the retention of such duties may be explained on the grounds of inertia, of protection against unusual conditions, and of added bargaining power

<sup>36</sup> Senate Document No. 206, *op. cit.*, pp. 120-25.

<sup>37</sup> *Ibid.*, pp. 129-30; 288.

in the monopolistic allocation of markets by international agreements and cartels. Intergovernmental controls, perhaps operated by an International Trade Authority, are needed to cope with certain international aspects of the monopoly problem. Reduction of tariffs, however, if effectively used, may contribute in a substantial way to the improvement of competitive conditions in the home market.

## A REAPPRAISAL of the UNITED KINGDOM'S BALANCE of PAYMENTS PROBLEM UNDER FULL EMPLOYMENT\* —

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The United Kingdom's problem in meeting her postwar import needs has been widely discussed; the debate on the United States-United Kingdom loan and the recent International Trade Organization meetings have brought it sharply to the fore again. The provisions of the loan requiring the United Kingdom to accept, partly through the International Trade Organization, a multi-lateral system of trading and to give up, within a year, the transitional controls and restrictions allowed under the Bretton Woods Agreements, calls for a review of the possibility of the United Kingdom's meeting the special demands of her foreign trade under a situation of full employment not only within the nation itself but over the world. It is largely accepted that if the world has a high and stable level of production and income, the problems of international trade will be at a minimum and will be more easily settled. The measures which are left to the United Kingdom in balancing her trade are based on the assumption that just such a condition will prevail and will allow domestic full employment and a higher standard of living. However, because of her normal excess of imports over exports of commodities and the still larger volume which will be desired in a fully employed economy, the United Kingdom must attain and maintain high levels of exports to balance her international payments and thereby not disturb her policies of domestic full employment.

The special problem involved in reestablishing Britain's foreign trade is of primary importance to the correct solution of all transitional problems of international trade and to the establishment of a world-wide, long-run system to foster balanced expansion of world trade.<sup>1</sup> This paper takes up, in Part I, the problem of whether the United States-United Kingdom loan will make the

\* The writer is deeply indebted to Dr. M. Kalecki for his suggestion that this examination be made and for various ideas which he added to the discussion and to Dr. B. Higgins for valuable criticisms. Despite their interest in the article, the writer is solely responsible for any error in the conclusions.

<sup>1</sup> Dr. E. M. Bernstein indicates the importance of the United Kingdom's problem as follows: "Until Britain's balance-of-payments problem in the post-war transition is solved, the objectives of free and orderly exchanges and non-discriminatory international trade cannot be wholly achieved. For Britain may feel compelled to retain wartime exchange controls, restrictions on the convertibility of sterling, and bilateralism and discrimination in international trade, if she cannot find another solution to her problem. A peaceful and prosperous world requires the integration of the United Kingdom and the British Commonwealth in the world economy as soon as possible." "British Policy and a World Economy," *American Economic Review*, Dec. 1945, p. 907.

unrestricted entrance of the United Kingdom into a world economy possible, and, in Part II, whether world prosperity will contribute to the solution of the problem under presently accepted international institutions, and if not, what measures might be adopted by the United Kingdom to attain a condition of equilibrium in trade which will not interfere with domestic full employment policies. It will be seen that the gravity of the situation points to the possible need of unusual methods of solution, but many of these are against the principles of the present international agreements. The general conclusion reached indicates the desirability of certain revisions in the presently proposed and accepted international institutions; unless the provisions are flexibly interpreted, or unless certain prerequisites are met in the world economy, the carry-over from the strain of the transition period combined with the long-run difficulties in the United Kingdom's trade may place such a burden on the balance-of-payments that the attainment of equilibrium in the longer run will be practicably impossible under a fully multilateral system of trade.

## I

The British Statistical White Paper supporting the need of a long-term loan from the United States presents data concerning the deficits in the United Kingdom's balance of payments which are likely to arise in the transition period. Under an assumption of 100 per cent rise in prices of exports (fob) and in prices of imports (cif) during the transition period over the prewar (1936/38) level, the deficit at the end of 1946 is estimated at £750 million, that arising over the years 1947-48 at £500 million,<sup>2</sup> with slight deficits in 1949 and 1950 leading to equilibrium in 1951. The total deficit on current account (including the military expenditures abroad which must be continued for some time) is given as a minimum at £1,250 million, not including the "slight deficits" during 1949 and 1950. A cumulative deficit of £300 million will be assumed for the years 1949-1951 (as will be indicated in the discussion of the long-run aspect, this is not an excessive estimate and might even be optimistic). Thus, the final figure for the cumulative deficit on current account during the transition period (1946-1951) will approximate £1,550 million.<sup>3</sup>

The United Kingdom's balance of payments problem in the transition and long-run periods is further complicated by the large amount of blocked balances which have arisen due to wartime expenditure and a small volume of borrowing. The White Paper gives the "net quick external liabilities" as £3,052 million and the "overseas loans" as £303 million on June 30, 1945. By September 1945 the total of these two had risen to £3,455 million. A safe estimate of the year-end total would be £3,600 million. The reserves of the United Kingdom and

<sup>2</sup> The deficit for 1947 alone has been reestimated at £500 million (Cf., *Economist*, Feb. 16, 1946) and the 1948 deficit is likely to be more than £250 million; but these changes only make the situation worse.

<sup>3</sup> The Federal Reserve Bank of New York also estimates the six-year deficit at about £1.5 million and adds that about 35-40 per cent of it will be with the U. S. *Monthly Review*, March 1946, p. 24.

her trade possibilities could not stand the burden of immediate release of these balances. In fact, they may not be absorbed within 15-20 years. Thus, long-term amortization of them is required. However, in the terms of the United States-United Kingdom loan, it is provided that some portion of these balances be released immediately (upon agreement as to the deferred release of some and cancellation of the remainder). If only 2 per cent of these balances were released on the average per year during 1946-1951, the total released during the transitional period would be £432 million.<sup>4</sup>

Adding the current account deficit and the released balances, Britain must have foreign exchange resources on hand or borrowed to meet payments of approximately £2 billion during the transition period. Without these resources, she will have to reduce her imports and suffer greater austerity than presently imagined.<sup>5</sup>

The United Kingdom government has foreseen the problem and has attempted to provide itself with the means to meet the deficit. Bilateral credit accommodations have been arranged with several countries for periods of 3 to 5 years,

<sup>4</sup> The assumption of a 2 per cent release during the transition is arbitrary. India and others will certainly press for release of larger amounts. If more is released, however, the dollar shortage in the United Kingdom becomes worse, for all £'s released must be convertible into United States dollars under the United States loan agreement. Also, any amount over £43.75 million is considered under the United States loan to be a capital export. Release of the balances by export of goods would not help the United Kingdom either, for that would decrease its returns from exports.

<sup>5</sup> Actually, this is what has been done, for imports have been reduced in favor of balancing trade, though a steady tendency to rise is noted; and exports, though rising month by month, as indicated in the following monthly data, have not reached the needed level:

Three month moving averages of the total retained imports (excluding munitions) during 1946 at 1938 prices (1946 prices are estimated at around 90 per cent above 1938 prices) are as follows:

January —£41	million	March—£45	million	May—£50	million
February— 45.5	"	April — 51	"		

as compared with the monthly average of £71.5 million in 1938, thus being about 60 per cent of the 1938 level.

Exports at present prices for 1946 were the following:

January —£57	million	March—£67	million
February— 60	"	April — 69.5	"

Thus, in January only 14 s. of goods were exported to pay for each £1 of imports and in April only 16 s. for each £1 of imports. By the end of June exports were still not paying for imports, but the gap was steadily being closed. Only a trifle of strictly nonessential goods were imported. Both imports and exports were increasing, but the volume of imports was strictly controlled. (Cf., *Board of Trade Journal*, June 22, 1946, p. 781 and July 27, 1946, p. 967.)

In 1938 prices, exports for the first quarter of 1946 were 80 per cent and for the first quarter of 1947 were only 101 per cent of the 1938 level, being far short of the 150 per cent originally estimated by the Government White Paper as necessary to balance trade. "United Kingdom—The Economic Position," London and Cambridge Economic Service, Bulletin II—Vol. XXIV, April 1946, p. 39, and *New York Times*, May 4, 1947.

to ease the pressure on exchanges, but they cannot reduce the ultimate deficit.<sup>6</sup> Long-term loans have been sought to postpone meeting the deficits, and the United States and Canada have granted loans of \$4.4 billion and \$1.25 billion, respectively. Therefore, adding the reserves of gold and U. S. dollars on hand and the resources made available under the Bretton Woods Agreements, the following table shows the assets which the United Kingdom may draw upon to meet the cumulative transitional deficit:

TABLE I  
*U. K.'s Assets in the Transitional Period To Meet Deficits in the Balance of Trade*

(a) U. S. loan (actual amount available) <sup>a</sup> .....	£ 937.5 million
(b) Canadian loan <sup>b</sup> .....	312.5 "
(c) Reserves of gold and U. S. dollars <sup>c</sup> .....	400.0 "
(d) Resources available from the Fund over 5 years.....	405.0 "
Total.....	£2,055.0 million

<sup>a</sup> The full amount less that in payment for lend-lease.

<sup>b</sup> At the revised exchange rate; £282 before the revaluation of the Canadian dollar.

<sup>c</sup> The figure of £400 million is derived from the June 30, 1945, figure of £453 million out of which a contribution of some £50 million must be made to the Fund and Bank. It is likely that the reserves were even lower at the end of 1945.

Thus, assuming all of the above assets could be used, the United Kingdom has resources of slightly over £2 billion to meet a cumulative deficit of slightly less than £2 billion. There seem to be ample resources, but this conclusion rests on some unrealistic assumptions. First, it is tacitly assumed in the above figures that the United Kingdom would be willing to use its reserves of gold and dollars completely; in practice, it could afford to use only about half of them. Second, in principle the Fund is to be used when a member does not have foreign exchange reserves to meet payments for imports; thus, it is possible that the United Kingdom would not be allowed to use the resources of the Fund so long as it has funds from the United States and Canadian lines of credit; even if she is allowed to use the Fund, she can do so only in the same proportion as she draws down her own monetary reserves. Therefore, it may be that the United Kingdom would not have access to the Fund until after 1948 (when she had depleted her other lines of credit),<sup>7</sup> at which time the 25 per cent of the quota limitation on purchasing from the Fund would come into effect, and the maximum which the United Kingdom could draw (without special permission) from the Fund before the end of 1951 would be £243 million. If, then, we take into account these qualifications, the resources which could be used by the United Kingdom

<sup>6</sup> These agreements have been made with Czechoslovakia, Belgium, Holland, Greece, Egypt, Sweden, Norway, France, Denmark, Turkey, Finland, and Switzerland.

<sup>7</sup> During the first half of 1946, United Kingdom purchases from the United States amounted to only \$450 million. It was estimated by British officials that purchases from the United States under the loan will average \$1.1 billion annually through 1948, when the credit will be exhausted; but needs have exceeded even that estimate, for by June 1947 over half the \$3.75 billion was drawn, leaving 1948 only partially provided for.



to meet a deficit of £2 billion dwindle to about £1.6 billion, leaving a deficit of £400 million to be carried over into the long-run period.<sup>8</sup> This £400 million may be added to the balances blocked during the war, for under the United States-United Kingdom loan agreement, only balances arising from current account trade *after* the loan has gone into effect must be released for conversion into dollars. Thus, any balances accumulated during the first half of 1946—before the loan went into effect—may be blocked and added to previous balances; this half-year deficit might easily be £400 million, since the entire deficit for the year is estimated to be £750 million. However, it is possible that Empire countries will not like this procedure and would rather have the balances in short-term obligations, to be repaid after 1951.

The over-all corrective of the transitional balance-of-payments position of the United Kingdom must be found within a framework of multilateral trade.<sup>9</sup> Under the various international agreements, the United Kingdom is committed to the following: (a) to promote the elimination of all discrimination in trade; (b) to refrain from discouraging imports from I.T.O. members; (c) to eliminate all preferences and not to introduce new preferences; (d) not to maintain quantitative restrictions on imports or exports; (e) to allocate quotas, when allowed by the I.T.O., on a nondiscriminatory basis; (f) not to use exchange controls, except as provided under the Fund; (g) not to use state-trading agencies to discriminate among sources of supply; (h) not to use export subsidies which result in sales abroad at prices lower than at home; (i) to run state-trading agencies on a purely capitalistic basis; (j) to accept the Bretton Woods Agreements and multilateralism.

In order to obtain the United States loan, Britain accepted the proposals for the International Trade Organization in principle, and the above conditions follow from it; final acceptance by Britain, however, depends on general acceptance by other nations.

Although a scarcity of United States dollars may be relieved by the United States loan, other currencies may become scarce to the United Kingdom through its continued imports in the volume desired. To keep some currencies from becoming scarce, the United Kingdom has made the direct credit arrangements mentioned before, but these are not all the countries with which she trades. If this type of arrangement were extended to all countries, much of the problem of scarcity of exchange would be relieved, but it is not certain that present agreements will be extended or that they will all remain after coordination with the international agreements.

<sup>8</sup> It may be objected that if there is a deficit remaining in 1951 the period of transition is not completed, and that until all past deficits are wiped out the United Kingdom is not logically in a "long-run" situation. However, it suits the purpose of this paper to use the years designated by the United Kingdom government and others, ending in 1951, as the transition period. Also see footnote 2 for reasons for a possible increase in this carry-over.

<sup>9</sup> This will be so after the first year of the United States loan; during the first year, imports may be reduced (as is actually being done) in an attempt to balance the payments. Deficits have continued monthly throughout 1946 and into 1947, with the first quarter of 1947 showing an adverse balance of £96,000,000. *New York Times*, May 4, 1947.

Another solution of the problem would, of course, be for creditor nations to extend further long-term aid to Britain. But the United States and Canada have granted all that is politically possible, and the only other countries which might be able to extend loans are Sweden, Switzerland, and Australia. Sweden and Switzerland have already made credit arrangements with the United Kingdom; Australia will likely extend only short-term credits to ease difficulties in the balancing of current payments, considering the present blocked sterling balances sufficient as a long-term loan. Since the United States and Canadian loans were made with the idea that they would be sufficient to relieve pressure on the United Kingdom's exchanges, it is highly unlikely that either would be able to agree to a loan to the United Kingdom from the World Bank. Besides the feasibility of creditors lending to the United Kingdom, however, there is another side of the question which has two aspects. One, the United Kingdom does not like a debtor position and would rather tighten her domestic belt slightly, maintain certain trade controls, and attempt to make ends meet that way than to go heavily into debt. (The United States loan itself met stiff opposition in Parliament for this very reason.) Second, many critics inside and outside the United Kingdom think that industrial reorganization and productivity will be accelerated by the threat of an unbalanced trade position. The validity of this observation cannot be denied, but there is no sense in breaking a system in an attempt to reform it. Further, the sale of remaining overseas investments would not help much for two reasons: (1) the best assets have already been sold and future sales would net little, and (2) a further reduction in assets would reduce the long-run income from investment making the deficit worse.

It seems, therefore, that under the present circumstances the best is already done for the transition period.<sup>10</sup> All that remains is to do the utmost in expanding exports, hope for the best settlement of blocked balances, and then carry over in short-term obligations (or as blocked balances) whatever deficit remains after 1951.

## II

The long-run trade situation of the United Kingdom is much more difficult of examination because of the various unsettled political and economic factors and because of its dependence on occurrences during the transition.<sup>11</sup> However,

<sup>10</sup> For a reasoned discussion of the whys and wherefores of the transitional difficulties, see *Federal Reserve Bulletin*, Jan. 1946, pp. 6-8.

<sup>11</sup> The Federal Reserve Bank of New York considers the connection between the transitional period and the long-run as follows:

While the agreement (United Kingdom-United States loan) will enable the United Kingdom to permit free convertibility of sterling at an early date and to remove discriminatory exchange and trade arrangements, there can, of course, be no absolute assurance that that country will be able to continue such policies into the more distant future and gradually to remove quantitative import restrictions and State-directed trading. The crucial problem is whether British exports of goods and services will have risen by the end of 1951 (when repayments on the proposed American credit and other external debts will commence) to a level sufficient to enable the United Kingdom to finance debt repayment as well as current overseas expenditure (which will continue at a high level), within the multilateral framework envisaged in the agreement. For, clearly, the United Kingdom could not countenance foreign borrowing indefinitely.

*Monthly Review*, March 1946, p. 25.

there have been several attempts to estimate the magnitude of the problem. The United Kingdom government intimates that trade will be balanced in the long run, but they do not indicate at what level. If the trade volume is to be consistent with high levels of national income, it will rise approximately in proportion to the rise in real national income.

Messrs. R. Hinshaw and Lloyd A. Metzler have attempted to estimate the volume of imports, exports, and invisible items of the United Kingdom trade in a postwar year of high real income within the United Kingdom and over the world.<sup>12</sup> From their calculation they obtained a trade situation which required a much smaller expansion of exports (or reduction of imports) than the usual 50 to 75 per cent estimation of an increase in export volume over immediate prewar levels to equilibrate the balance of payments in the postwar period. Their method of plotting the volume of imports and national real income during the 1930's to obtain the propensity to import, and the volume of exports with world real income (minus the United Kingdom) to obtain the propensity to export, is admittedly imperfect as a basis for estimation for a postwar period. Many factors have changed: tastes, distribution of industries, markets, demands, and products. However, the method seems to be as good as any so far suggested or considered.<sup>13</sup> Their assumption of a proportionate increase of only 25 per cent in export and import prices may be an under-estimation; it certainly does not compare with the 100 per cent increase taken by the United Kingdom govern-

<sup>12</sup> "World Prosperity and the British Balance of Payments," *Review of Economic Statistics*, Nov. 1945.

<sup>13</sup> The writer has seen two others—one rather pessimistic, one over optimistic.

(1) The Federal Reserve *Bulletin* in an article on "The United Kingdom and Post-War International Trade," Jan. 1946, estimated that net national income would rise by 22 per cent in the postwar and imports would rise by 15 per cent in 1938 prices; allowing the present 90 per cent rise in prices over 1938, the postwar value of imports would be £1,900 million. Their conclusion is that "it will not be possible to abandon all import controls imposed during the war at any time in the immediate postwar period. It may be expected that when Great Britain attains a balanced international position it will be on the basis of a volume of imports below the level corresponding, by prewar standards, to the country's national income. Consequently, there will be a tendency for imports to rise and to upset the balance unless some of the restrictions imposed during the war are maintained for some time" (p. 11). This conclusion corresponds closely to that drawn by the writer.

(2) Dr. E. M. Bernstein bases an estimate of the United Kingdom's postwar balance of payments on a comparison of the probable rise in world export volume, saying that total export volume will rise by one-third, reaching a level of \$40 billion, which will allow Britain to export \$4.5 billion (about £1.1 billion). To attain exports of only \$4.5 billion, a 50 per cent increase in the 1938 volume is required along with a 33 per cent increase over 1938 prices. This level of exports would allow the importation of the 1938 volume of goods at a postwar cost of \$5.6 billion; invisible exports would presumably fill the deficit in trade. (Cf. "British Policy and a World Economy," *American Economic Review*, Dec. 1945, pp. 897-898.) This estimate is in accord with that of the writer as to the probable expansion in world income—and thereby in world exports—of about 30 per cent. However, Dr. Bernstein does not take into account that the increase in world exports requires a corresponding increase in world imports, part of which Britain must share also. This factor and that of a rise in national income will cause a rise in imports over the 1938 level unless they are rigidly controlled.

ment or with the 90 per cent increase of present prices over prewar levels. Still it is a safe assumption for the long-run situation for it will impart an optimistic bias to the pessimistic conclusions for the year 1951, since a larger increase in prices would worsen the terms of trade. Because imports into the United Kingdom are greater than exports from it, a rise of equal proportions in export prices and import prices would increase the deficit in the balance of payments. Actually, however, the prices of United Kingdom imports will probably rise more than those of export prices, for in periods of prosperity prices of raw materials and other staples which the United Kingdom imports in quantity are higher and those of machinery and finished goods, which are highly competitive, exported by the United Kingdom are generally lower.<sup>14</sup> In this case, the situation would be much worse than shown under the present assumptions.

A major fault in Hinshaw's and Metzler's assumptions concerns their estimate of the rise in real national income of the United Kingdom. They take Kaldor's estimate, based on 1938, adjust it to 1937 and obtain a figure of 114 per cent of the 1937 level of real national income for a postwar year of high employment, which is presumably after 1950. This estimate is understated for such a year, however, for Kaldor's figure is for real national income in 1948. A more appropriate calculation is that made by M. Kalecki, also based on the 1938 level, for 1951. He calculates that the United Kingdom's national output will then be 135 per cent of the 1938 level (and net national income 133 per cent over its 1938 level).<sup>15</sup> If this figure is adjusted so as to be based on the 1937 level and is reduced slightly for optimism, it will become 130 per cent. This figure relates to the same period as does Hinshaw's and Metzler's estimate of real national income of the United States in the postwar year of 180 per cent of the 1937 level.

If the charts given by Hinshaw and Metzler are reinterpreted under the new assumption of a 30 per cent rise in real national income for the United Kingdom

<sup>14</sup> It is a peculiarity of the United Kingdom's trade that, during periods of prosperity and high price levels, the value of imports rises out of proportion to the rise in value of exports. This result is due to two factors: (1) the rise in prices of both causes a worsening of the balance of trade due to the larger volume of imports than exports; (2) the prices of imports, being mostly foodstuffs and raw materials, fluctuate more highly than those of exports, being manufactured goods mainly, and thus, in prosperous times the actual price rise is greater for imports than for exports, causing a still further worsening of the trade balances. In other words, the price elasticity of demand for United Kingdom exports is high, but that of United Kingdom's demand for imports is low. From this observation it might seem that Britain's trade balance would benefit from a depression abroad, for she would get imports cheaper. However, imports must be paid for by exports, and if other countries are in a depressed state, they will not take imports. Also, the return from British overseas investments would be less, requiring a greater volume of exports to meet needed imports. Therefore, the general level of trade would be reduced, if equilibrium was gained, and the economy of the United Kingdom would be hard-pressed and the standard of living lowered.

<sup>15</sup> Kalecki, M., "Employment in the United Kingdom during and after the Transition Period," *Bulletin of the Oxford Institute of Statistics*, Vol. 6, Nos. 16-17, Dec. 4, 1944, pp. 277-278. The main differences in this estimate and that of Kaldor are reviewed *ibid.*, pp. 284-285, footnote; they indicate further the greater applicability of this estimate to our purpose over that of Kaldor.

and the final balance of payments includes the addition of interest and repayment charges of the United States and Canadian loans, a different picture of the trade and payments balances is obtained. In fact, the situation becomes rather grave.

Using the chart supplied by Hinshaw and Metzler, with a rise of 30 per cent in real income, the volume of United Kingdom imports would rise 22 per cent over the 1937 volume, and the value of imports would rise 53 per cent. Taking the rise of 22 per cent in volume, the value of retained imports at 1937 prices would be  $1.22 \times \text{£}953$  million, or  $\text{£}1,165$  million; if this figure is inflated by the assumed price rise of 25 per cent, imports in 1951 would reach  $\text{£}1,454$  million.

Hinshaw and Metzler assume a rise in world real income of 30 per cent<sup>16</sup> and state that British exports would then be 22 per cent above the 1937 volume, or  $\text{£}653$  million at 1937 prices. With a 25 per cent price rise, exports would be  $\text{£}795$  in the postwar year, making a 52 per cent rise over the 1937 level. This calculation for exports is reasonable and will be accepted by the writer.

The 1937 balance of trade, the balance estimated by Hinshaw and Metzler for a postwar year, and the balance obtained by the writer are given in the following table:

TABLE II  
*Estimation of the U. K.'s Balance of Trade*

	1937	POSTWAR YEAR WITH 25% PRICE RISE AND OUTPUT 114% OF 1937	1951, WITH 25% PRICE RISE AND OUTPUT 130% OF 1937
		<i>in millions</i>	<i>in millions</i>
Retained imports .....	£953	£1,288	£1,454
Exports of U. K. products .....	521	795	795
Trade deficit .....	£432	£ 493	£ 659

Thus, instead of there being only a slight worsening of the trade balance on current account as stated by Hinshaw and Metzler, the 1951 deficit would be 56 per cent greater than the 1937 deficit.

To offset this deficit in the trade balance there will be an increase in the return

<sup>16</sup> This assumption of a uniform rise in national real income of various countries will bring a discrepancy in the conclusion. If certain countries attain only the 1937 level, they could export only at that level (unless they deprive themselves) and would therefore take a smaller amount of exports from the United Kingdom. Also, some of the main countries which are markets of the United Kingdom may not even reach the 1937 level; on the other hand, some may exceed it. Thus, the actual marginal propensity of some countries to import from the United Kingdom may be overstated. Those countries developing industrially (Australia, South Africa, India, and South American nations) will shift their demands to agricultural, raw material and luxury goods, reducing their demand for many United Kingdom products. On the other hand, some countries, as they begin industrialization, will increase their propensity to import from the United Kingdom. On the whole, the shifts in propensity may cancel out, but the total effect will be to require the United Kingdom to shift the direction of her trade in goods formerly exported and to export new goods to old markets.

from invisible exports: net shipping income, income from overseas investment, and short-term interest and commissions. The calculations made by Hinshaw and Metzler concerning these items need not be reviewed and may be taken as reasonably correct.<sup>17</sup> They also assumed that some £3 billion in blocked balances will be turned into long-term debt; with an interest rate of 2 per cent, the annual payments would be £60 million. However, it is probably more reasonable to assume that the same terms of interest and amortization of the United States and Canadian loans will apply to the blocked balances. If some £600 million of the balances are cancelled and if those released during the transition are offset by blocking of the transitional deficit, the long-term obligation will total £3 billion. Amortized over 50 years and with an interest rate of 2 per cent, the annual payments would approach £100 million.

Table III gives the 1937 balance of payments, the balance calculated by Hinshaw and Metzler for a postwar year of high prosperity, and the writer's calculation for 1951.

Thus, in order to attain balance in international payments, the export volume must be increased to a level approximately 144 per cent of the *1951 expected volume*, which is itself already 52 per cent higher than the 1937 volume because of high levels of income over the world. The alternative is to reduce imports by slightly less than 24 per cent of the 1951 estimated level. That is, imports could be allowed to rise to a level only 116 per cent of the 1937 volume—if equilibrium in the balance of payments is to be attained. This means that with a price rise of 25 per cent, the volume of imports at 1937 prices would have to be kept at £885 million so that at 1951 prices the volume would be only £1,107 million. This projected level is lower than the 1937 volume of £953. Thus, if equilibrium is to be attained, strict control of imports must be maintained even into the long run.

We may summarize the estimate of the percentage expansion of exports needed by the United Kingdom to balance its international payments as follows:

(a) It was formerly estimated by the United Kingdom government and others that exports would have to be expanded by 50 per cent over the 1938 level (at 1938 prices) in order to obtain the 1938 level of imports. This was due to the loss of invisible exports during the war. This estimate was later revised to

<sup>17</sup> The calculations relevant to these items are as follows:

(a) Income from overseas investment was obtained by relating it to world money income. With a 25 per cent rise in prices and a 30 per cent rise in real world income, world money income would be 160 per cent of the 1937 level, and the index for net income from overseas investment is shown to be 165.5 at world prosperity. Loss of assets during the war reduced overseas income by one-third. The estimated income (net) at high world prosperity, would then be 110 per cent of the 1937 level, or £230 million.

(b) Net shipping income was estimated by the same method. A 10-point rise in the index of world money income corresponded to a 12.8-point rise in the index for shipping income. Normal shipping income corresponding to a world money income index of 160 would be £213 million. A reduction of tonnage by one-fourth during the war reduced the figure to £160 million.

(c) Short-term interest and commissions were also related to world money income on the basis of 1931-1937 figures. Actual calculations were not given.



about 75 per cent. These estimates were made without regard to an increase in national income in the United Kingdom or in the world—only in regard to the prewar level of imports.

TABLE III  
*Estimation of the U. K.'s Balance of Payments*

	1937	H. & M.'S POSTWAR YEAR	ESTIMATE FOR 1951	INCREASE 1951 OVER 1937 IN %
	<i>in millions</i>			
Demand for foreign exchange:				
Retained imports.....	£953	£1,288	£1,454	53%
Government payments.....	4	4	4	
Payment on blocked balances.....		60	100	
U. S. loan—interest and repayment*.....			35	
Canadian loan—interest and repayment*.....			9	
Total.....	£957	£1,352	£1,602	67%
Supply of foreign exchange:				
Exports of U. K. products.....	£521	£ 795	£ 795	52%
Net shipping income†.....	130	160	160	23
Net investment income†.....	210	230	230	10
Short-term interest and commissions†.....	40	60	60	50
Other (net).....	10	10	10	
Total.....	£911	£1,255	£1,255	38%
Deficit.....	£ 46	£ 97	£ 347	

\* Under the United States and Canadian loan agreements, there is provision for waiver of interest if the volume of exports is not enough to cover the prewar average of imports, calculated at £886 million, adjusted to postwar prices. Assuming a rise of 25 per cent in prices, the import volume to be covered would be £1,100. If interest is waived, payments on blocked sterling must be reduced proportionately. It seems unlikely, however, that exports will not cover this volume of imports. If prices rose more than 25 per cent some relief might come from this quarter.

† Dr. Benjamin Higgins, in an unpublished study for the International Labour Office, estimates that net shipping income in 1951 will be no more than £150 million, net income from commissions, insurance, etc., will be only £50 million and net investment income will be £210 million. He supports these estimates by comparison to the 1936-38 average and the losses during the war. He accepts the calculation of the demand for foreign exchange given here by the writer. If his estimates are correct, the position is only worsened and the need for expanded exports increased over the percentage stated above.

(b) Messrs. Hinshaw and Metzler attempted to show that a rise in world real incomes would provide the necessary rise in export volume *plus a rise in invisible exports* to a degree that a further rise in exports of only 12 per cent would offset the expanded volume of imports desired by a prosperous United Kingdom. In world prosperity, they estimated that exports would rise 53 per cent and income from invisible items would rise such that the supply of exchange would rise by

39 per cent. With a level of real national income in the United Kingdom 114 per cent of the 1937 level, the demand for exchange would rise only 41 per cent (with import volume rising 35 per cent over the 1937 level). Thus, the postwar balance of payments would be only slightly worse than the 1937 balance.

(c) With the assumption of a higher level of real national income in the United Kingdom (130 per cent of the 1937 level), the import volume would rise 53 per cent of the 1937 level, and the requirements of exchange would rise by 67 per cent (due to the debt charges of the United States and Canadian loans and the blocked balances). The export volume would be as shown in Table III, rising 52 per cent over the 1937 level, with the supply of exchange rising 38 per cent. Thus, the export volume at high levels of world prosperity would have to rise an *additional* 44 per cent of the expected 1951 volume or to a level *220 per cent* of the 1937 level at postwar prices (over 175 per cent at 1937 prices) in order to reach equilibrium in the international payments.

If trade must be left absolutely free, one type of solution may be possible. Britain could become a debtor nation for a generation, borrowing indefinitely to meet her payments for imports. Ultimately she would have to repudiate all of them. This was, in effect, what the United Kingdom attempted to do by asking for grants-in-aid, and these would have been undoubtedly the best solution for all nations concerned. But political atmospheres would not allow them, nor would Britain borrow with an eye toward repudiation. Repudiation would be self-defeating, for Britain wishes the pound sterling to regain its former position in international finance. This same desire makes the necessity to block sterling balances especially onerous and is the reason why many Britishers balk at tying the pound closely to any currency.

In order to reach equilibrium in the balance of payments at a level of imports commensurate with the volume of real national income attained at full employment, the United Kingdom must expand its exports to a level greatly in excess of the 1937 level. It is not yet shown whether she will be able to do so within the framework of a free, multilateral system of world trade. If she cannot expand her exports to the requisite level, she will have to reduce imports or suffer a drain on her monetary reserves which would soon lead to deflation and widespread domestic unemployment. Since the United Kingdom government is strongly committed to the maintenance of domestic full employment, a reduction of imports is the only alternative.

There are two objections to such action, however: (a) Effective restriction of imports requires many controls over trade, few of which are to be allowed under the presently proposed multilateral system of trade; thus, if imports must be controlled to maintain full employment, the United Kingdom will have to implement a less than multilateral system. It seems that she has at present no intention of following this line, for she has firmly tied herself to the Bretton Woods Agreements and the proposed International Trade Organization by accepting the United States loan.<sup>18</sup> The difficulties cited may be foremost in the

<sup>18</sup> Since this article went to the printers, the United Kingdom government has begun negotiation with the United States to relax some of the provisions of the loan to allow closer control of imports for a longer period.

minds of those of the United Kingdom who find it hard to accept the multilateral system proposed in the International Trade Organization agreement. A solution to this dilemma may be found in the rationing of domestically produced goods, allowing an increase in exportable commodities and therefore reducing the need to restrict imports. However, this method can succeed only if the terms of trade are very favourable; also, it falls heir to the second criticism of restriction of imports. (b) Any restriction of the import volume reduces the amount of goods available to consumers if no corresponding expansion in domestic production is made, thereby lowering the standard of living in the country. Rationing of domestically produced goods also means that consumption is limited and that the standard of living is held low on the average. There is some question as to the degree of appropriateness of this last criticism, however, especially in a country which is expanding under full employment policies. If real national income rises under full employment (attained through expansion of domestic expenditure), the standard of living will rise. The only objection that can remain is that unrestricted imports together with full employment based on domestic expenditure might produce a still higher standard of living.

## THE DEMAND FOR CIGARETTES IN AUSTRIA

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The use of cigarettes in place of normal monetary media, both as a standard of value and as a mechanism of exchange, throughout much of war-devastated Europe and Asia has come to be a commonly accepted phenomenon.<sup>1</sup> In view of the extensive amount of discussion and comment which has taken place on this subject, it seems appropriate to examine a series of data available on prices of cigarettes on the black market of Vienna during the immediate postwar period to see what, if any, conclusions can be made.

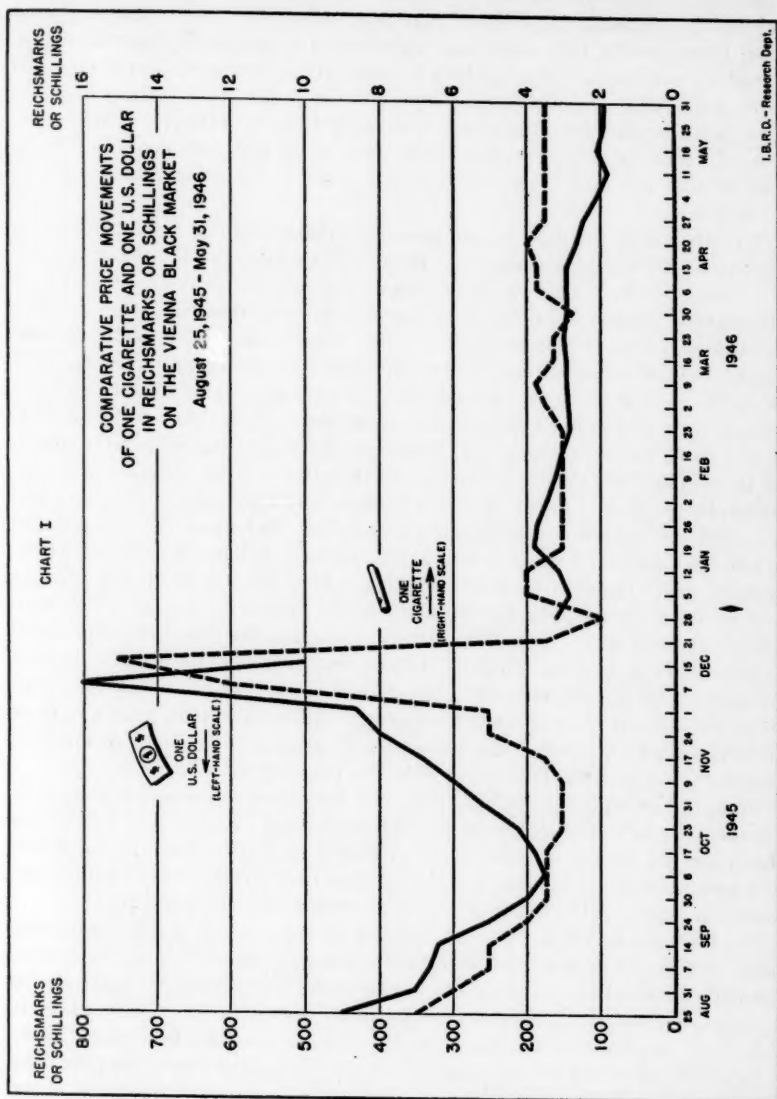
Chart I shows price movements of American cigarettes and U. S. dollars in terms of reichsmarks or schillings<sup>2</sup> from the period of U. S. entry into Vienna until the end of May 1946, nine months later. The quotations are "official black market prices," obtained by the Economic Security Police of Vienna. Although these data are unpublished, their authenticity is beyond doubt and they have been corroborated by the author by consultation with responsible Austrian financial and economic officials.

As can be readily seen, the time period about which this study is being made is particularly significant because of the very substantial price fluctuations occurring therein. It is a statistical truism that any given coefficient of correlation between two variables, both fluctuating widely, is far more significant than the same correlation when the variables display only slight range of variation. Chart I shows that the degree of correlation between the price of cigarettes and the price of the U. S. dollar on the Vienna black market is extremely high indeed.

The question immediately arises as to what is the explanation for the substantial similarity of price movement demonstrated by cigarettes and dollars. First it is appropriate to examine the causes of fluctuation in the price of the U. S. dollar. The large variations in the price of the dollar in terms of the local currency are explained simply by the monetary situation existing during the period. Upon the entry of the Western powers into Vienna in August 1945, confidence in the currency was to some extent restored and, more important, the general supply situation was considerably ameliorated. In October 1945, information about the abortive currency conversion, planned for that month but not consummated, leaked out to the public and confidence in the reichsmark was rapidly impaired. Finally the restrictive provisions of the actual currency conversion

<sup>1</sup> See, for example, "The Age of the Cigaret," *Time*, Jan. 13, 1947, pp. 28-29, for a typical popular reference, and Charles L. Prather, *Money and Banking*, p. 11, for a typical textbook reference.

<sup>2</sup> At time of entry of U.S. forces in Austria, the German reichsmark was the basic legal tender of the country. Subsequently the currency conversion of December 1945 replaced this unit with the Austrian national schilling. It should be noted that the price shown on Chart I is the price per cigarette, not price per package. Although no official exchange rate was established, the rate of 10 cents per mark or schilling was used for purposes of military accounting and the existence of this rate was commonly known by the public.



operation were announced on December 1, 1945, at which time a panic effort to get rid of reichsmarks for dollars at any price occurred. This condition existed until December 20, 1945, when the conversion was completed; then the severe monetary restrictions which had been introduced caused a very sharp drop in the price of the dollar. Variations in the price of the dollar were relatively insignificant thereafter and, from the middle of January 1946 until the end of May 1946, a steady, although slight, decline in the price of the dollar demonstrated itself. This decline was largely the consequence of the excellent monetary controls introduced.

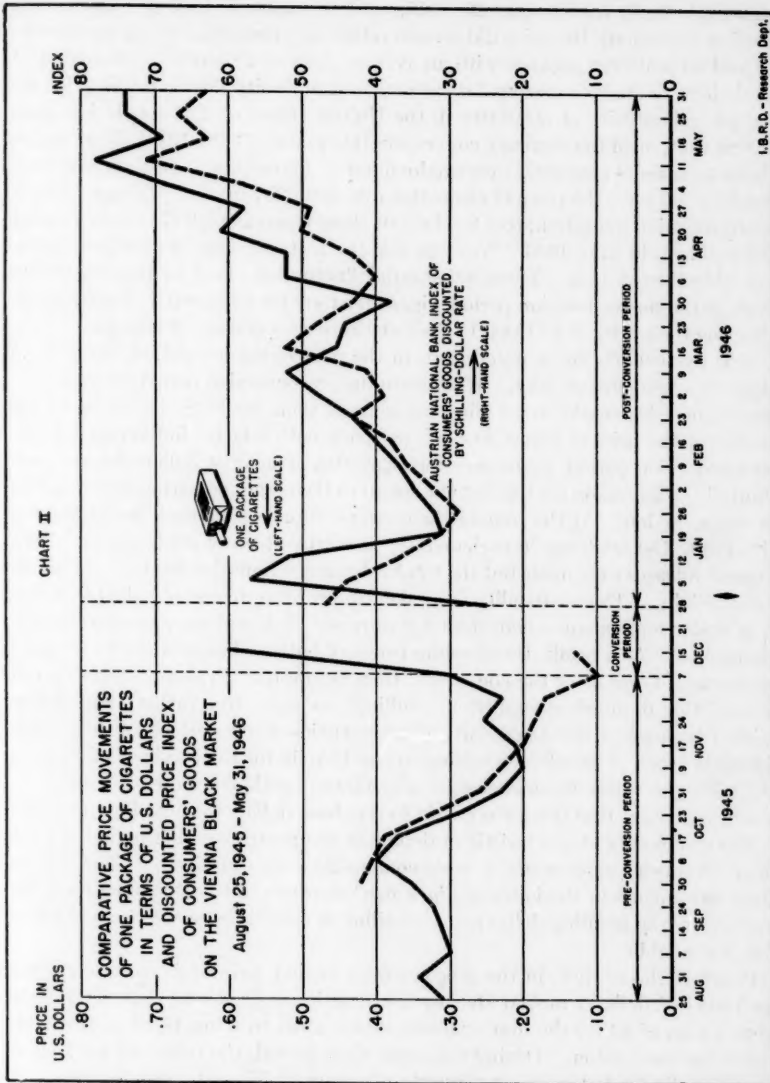
This analysis of the price movements of the dollar could as well be applied to movements in the price of cigarettes. From even a cursory examination of Chart I, one would conclude that the same factors affected the price of cigarettes as affected the price of the dollar. This means, in brief, that cigarettes acquired substantial monetary characteristics. Nor is this an unexpected conclusion since cigarettes fulfill many of the basic requirements for a money system. The unit is readily divisible—one pack is easily broken down into 20 individual cigarettes and as easily sold in units of cartons as packages. On the basis of information from reliable Viennese authorities, there is no doubt that cigarettes were sold in all three units, individually, in packs, and in cartons. Cigarettes are noncounterfeitable—a pack of Lucky Strikes or Camels cannot be easily duplicated—and are widely, in fact, almost universally, acceptable. As long as the cigarettes are in unbroken packs, they can be hoarded for a relatively long time and can be exchanged many times without deteriorating. They are not nondestructible, of course, but are much more so than many of the commodity monies which have historically been used. They have intrinsic value, a factor of no little importance in an area where substantial inflation is occurring and where the legal tender unit is suspected by the public of either being, or about to become, worthless. Furthermore, cigarette money is self liquidating. As its value falls, more and more cigarettes would be smoked and, consequently, as long as the supply is not very elastic, there is a virtual floor below which the price cannot fall.

From the preceding paragraph, it is seen that there exists ample reason for cigarettes to have acquired monetary characteristics. From Chart I it is seen that price movements of cigarettes were closely similar to those of the dollar. The conclusion seems evident that, in the time period under consideration, cigarettes in Austria did take on very substantial monetary characteristics.

The next question is whether the demand for cigarettes is purely a monetary phenomenon (the demand for money or for a money substitute) or whether the demand contained any substantial special characteristics unique to cigarettes as a commodity and not as a money substitute. One approach to the answer to this question is to discount changes in the price of cigarettes by changes in the price of the dollar and thus to remove the purely monetary aspect from the price of cigarettes. This has been done in Chart II by transforming the price of cigarettes (expressed in marks or schillings in Chart I) into price per pack in U. S. dollars.

If cigarettes were to be considered purely the equivalent of U. S. currency,





then, obviously, the price of cigarettes in terms of the dollar would remain constant. Actually from August 25, 1945, until December 7, 1945 (the last preconversion quotation), the price did remain relatively constant, fluctuating between 20 and 40 cents per package with an average price of 29 cents. (No attempt is made here to analyze reasons for the amazing similarity between this price and the prevailing price of cigarettes in the United States.) The conclusion is apparent that, until the currency conversion (December 13-20, 1945) the monetary characteristics of cigarettes were predominant. Subsequent to the currency conversion, however, the price of cigarettes rose from 25 cents per package, the first postconversion quotation, to a level about three times as high (74 cents-78 cents per package) in May 1946. Nor was this rise a steady one, but subject to considerable fluctuations. These substantial fluctuations lead to the conclusions that, in the postconversion period, cigarettes took on substantial characteristics affecting their price in addition to their attribute as a money substitute.

It is particularly to be noted that, in the postconversion period, the price of cigarettes rose substantially. Whereas in the preconversion period, an individual possessing reichsmarks was willing to exchange them for U. S. dollars or for cigarettes at the price of about 30 cents per pack with relative indifference, in the postconversion period, preference for cigarettes as against dollars became substantial. The reason for this is to be found in the monetary stringency resulting from conversion. At the time of the conversion operation, each individual was given only 150 schillings in exchange for his entire stock of reichsmarks.<sup>3</sup> Subsequent releases were made but the total volume of circulating media was reduced substantially. The availability of local currency for purchase of valuable dollars or a dollar equivalent (cigarettes) for purposes of hoarding was substantially diminished. As a result, the absolute prices of both dollars and cigarettes were, on average, lower after the conversion than before it.<sup>4</sup> Preference for expenditure of this diminished supply of schillings on cigarettes rather than dollars existed because of the commodity characteristics of cigarettes. A not inconsiderable group of people was willing to pay heavily for the privilege of smoking and willing to utilize its small supply of schillings for this purpose even if this expenditure meant that it were not able to purchase dollars for hoarding purposes.

The commodity characteristic of dollars in the postconversion period is made clear when price movements of other commodities are examined. Chart II also gives movements in the index of black market prices of basic commodities, discounted by the schilling-dollar rate prevailing at each date for which an observation is available.

Chart II shows that, in the preconversion period, prices of consumers goods (in terms of dollars) moved sharply and continuously downwards, decreasing from a high of 42 for the first available observation to a low of 10 immediately before the conversion. During this same time period, the price per package of cigarettes fluctuated rather irregularly, starting at 35 cents and closing at 30

<sup>3</sup> Frank S. Southard, Jr., *Financing European Liberation*, p. 198, gives summary information on the Austrian conversion.

<sup>4</sup> See Chart I.

cents. Thus in the preconversion period, movements of cigarette prices are relatively unlike those of other commodities and very closely parallel movements of the black market price of the dollar. Postconversion, however, the similarity in the movements of cigarette prices and other commodity prices is strikingly demonstrated by Chart II. In this period, the Viennese preferred to utilize what schillings they had for the purchase of real commodities on the black market rather than purchase dollars for hoarding. The evidence contained on Chart II establishes the commodity characteristics of cigarettes in the postconversion period.

The analysis above leads to two basic conclusions. First is the monetary characteristic taken on by cigarettes, for the price trends of cigarettes closely followed the price trends of the U. S. dollar, especially in the preconversion period. Yet, in spite of the monetary attributes of cigarettes, the second conclusion is that their price is not purely a monetary phenomenon but that, in the postconversion period, cigarette prices moved to a considerable extent along with commodity prices. During this period, the dollar value of cigarettes and other commodities was raised, indicating increased inclination to utilize scarce schillings for real commodities rather than for the purchase of dollars for hoarding.

## BOOK REVIEWS

*Full Employment and Free Enterprise.* By John H. G. Pierson. Washington: Public Affairs Press, 1947. Pp. vii, 183. Paper, \$3.00.

*Public Investment and Full Employment.* Montreal: International Labour Office, 1946. Pp. ix, 348. \$2.25.

*The Mechanics of Full Production and Full Employment.* By Eugen Berkovits and George C. Atkins. New York and Chicago: Wilcox & Follett Co., 1946. Pp. 71. \$2.00.

One may find good in some plan to stabilize or expand consumer demand by subventions to consumers from the treasury without being a close follower of Major Douglas. Such is the case with Professor J. E. Meade (*Consumers' Credits and Unemployment*) and with Dr. Pierson (*Full Employment*).

Dr. Pierson's present volume consists in the main of variations on the theme of "national income insurance" in the form of 14 articles and addresses which were published during the years 1942 to 1946 inclusive. His principal objective is indicated by the title chosen. The recommended means include, first, "sound measures to promote employment" (p. 2), such as the effective prevention or regulation of monopoly practices, the establishment of a fiscal policy consistent with public policy as a whole, the establishment of a broad social welfare program, and a foreign trade and investment policy designed to permit the optimum use of resources instead of serving as an instrument of economic warfare. Second, and greatly emphasized, is the national income insurance proposal. Accepting the Malthusian-Keynesian notions of deficient consumer demand, the author would have the federal government guarantee in advance each fiscal year (or other appropriate period of time) a dollar volume of spending sufficient under existing conditions to support the desired volume of employment. Conversely, any excess spending conducive to price inflation would be checked by decreases in allowances, increases in taxes, or both. Finally, as a tertiary line of defense against unemployment, a flexible public works program is advocated.

In regard to government fiscal policy, expenditures and revenues would be keyed to gross national product and expenditures. What most people will probably regard as a heavy series of variable outlays for public housing, health, education, conservation of natural resources, and social security is recommended. In regard to revenues, chief reliance would be placed on progressive personal income taxes, with loopholes for escape closed; differential corporate income taxes on monopoly earnings would be imposed, as well as a reduction effected in the tax burden on equity capital and new enterprises; excise taxes would be reduced or abolished, with certain exceptions; and a portion of the costs of social security would be met by general taxation. Deficits would be financed by the issuance of low or non-interest-bearing securities, or paper money.

The author does not regard exports of goods or capital as a proper means to stimulate domestic employment, but "a sound domestic program for full employment, founded on internal measures . . . will create . . . the conditions and the

psychology on which broad American support for liberal trading practice must ultimately rest" (p. 94).

The reader of the report, *Public Investment and Full Employment*, which is the most recent of a series, submitted to a committee of the international Labour Office, dealing with certain specified aspects of public works, will find a brief objective discussion of particular problems, such as the role of public investment in certain countries in facilitating postwar reconstruction and preventing transitional unemployment, also the continuing problems of "excess-savings" and "capital-scarcity" areas, and the financial and technical aspects of timing. Part IV gives a brief discussion of the conditions peculiar to, and the counter-cyclical policies of, six countries during the 1930's. The concluding and longest portion of the report (Part V) attempts to examine the task ahead in several countries and to give a summary of tentative public works plans in each. The concluding chapter lists a number of guiding principles suggested as pertinent. Four appendixes are included, dealing respectively with recommendations and resolutions on public investment policy adopted by the International Labour Conference, problems of estimating process effects, public expenditures other than investment, and a glossary of terms.

The authors of *The Mechanics of Full Production and Full Employment* see in the maintenance of the circular flow of money the necessary and sufficient means to full employment and a stable price level, once a level of full employment has been reached. The United States at present enjoys full employment, consequently now is the time to act. The circular flow of funds, or the spending of all income for goods and services currently produced, can be partially insured by such policies as tax reform designed to stimulate both investment and high level consumption, the effective curbing of monopoly, limited aids to small business, the more equitable distribution of income, the balancing of the budget, and the cessation of the issuance by government of interest-bearing securities.

In their view, the program will be complete if at all times any residue of idle personal or business funds is channeled from financial institutions by government mandate into the proposed federal investment bank, without payment of interest to the owners, to be used to finance (a) expenditures for national welfare work of the various types suggested, and (b) the extension of credits to foreign countries for the purchase of goods domestically produced. To give effect to the former type of expenditure, a national welfare board would at all times have a reservoir of planned projects; contracts for their execution would be placed with private enterprise. Loans to foreign countries would be predicated on a favorable prognosis of their ability to service the debt, but proper consideration would be given to humanitarian motives.

Each of these three volumes constitutes an exhibit taken from a large and relatively diverse group of recent publications dealing with related problems in which there is properly great current interest.

Dr. Pierson's emphasis on cash payments to consumption units involves not only perplexing administrative problems, but also the question of its consistency with a free market economy. The hazard of general shrinking of markets is of

vital import to all segments of our economy. But even those who are not intransigent advocates of *laissez faire* are inclined to ask concerning the consequences of the proposals, sketchily outlined by Dr. Pierson, on the basic elements of our system, and whether or not institutional arrangements and behavior patterns may not be so modified as to give rise to yet further intervention. Many pertinent questions are posed; they remain as questions.

The report to the International Labour Office represents, in the opinion of the reviewer, not only an excellent presentation of many pertinent facts, but also a superior analysis of the practical and theoretical implications of public works and related measures. It should be most valuable to the student.

In their brief volume, it appears that Messrs. Berkovits and Atkins minimize or overlook certain difficulties involved in their proposal, such as the ease with which resources may be shifted between strictly private employment and national welfare projects, the method of determining the amount of idle funds, the place of institutions such as insurance companies in their plan, and implications for free private enterprise. They perhaps impute too much magic to the multiplier. They are too sanguine, perhaps, relative to the liquidity of the Federal Investment Bank, the liabilities of which will be payable on demand (they anticipate no net withdrawals during any time period). They fail to place proper emphasis on the difficulties in maintaining stable prices, particularly increases in prices, under their conditions of full employment. They are too optimistic regarding the efficacy of foreign loans in supporting domestic demand in the face of world-wide recession.

Davidson College

A. G. GRIFFIN

*Income, An Introduction to Economics.* By A. C. Pigou. London: Macmillan Co., 1946. Pp. vii, 117. \$1.50.

One would have thought that Professor Pigou, with so many famous works to his credit, would have been content to rest upon his achievements. But in the present little book the Maestro seizes the baton once more and gives a performance which most economists of the younger generation will be hard put to it to rival.

What Pigou manages to do is to compress into 117 pages an introduction to business cycles, national income theory, money, unemployment, the division of labor, the "optimum" allocation of resources, taxation theory, public finance, foreign trade, and so on. Of course there is a great deal left out, but the writer believes that a teacher of elementary economics will find here a single well-integrated scheme of organization excellently fitted for the beginner and so arranged as to permit the introduction of supplementary material, wherever relevant, without disturbing the basic structure.

Inevitably this book will be compared with its predecessor, Hicks and Hart's *Social Framework*, to which Pigou makes generous reference. This is a difficult task. So far as organization goes, the writer believes Pigou's volume far superior. On the other hand, the greater variety of topics covered by Hicks and Hart, and their rather more interesting style, makes the latter in some ways preferable. Perhaps it is best to say that they are both very good.



Professor Pigou enlivens his text with numerous flashes of humor. For example, concerning the limits to specialization and training, "No man . . . however keenly he may desire it can ever successfully become a mother." Or after defining capital, "I recommend to you that definition, but whether you like it or dislike it . . . you will probably agree that capital is *not* as it was once elegantly defined, 'Money taken from the laboring classes, which being given to army tailors and such-like enable them to keep fox-hounds and to trace their descent to the Normans.'"

The defects of Pigou's book are partly the result of lack of space, partly (if one considers them defects) of the general English social outlook. Due to lack of space, monetary factors are largely slurred over. This seems an important omission, but one which the instructor himself can easily repair. Among other weak points (to this reviewer) are excessive equalitarian bias and insufficient stress on the need for entrepreneurship as well as knowledge.

It must not, however, be thought that Professor Pigou merely explains the same general line as Sir William Beveridge and others. Quite the contrary. Beveridge, it will be remembered, thought "full employment," insurance benefits, etc. would make unions more "responsible." Pigou, however, says:

Soon after the last war the system of compulsory State-aided insurance against unemployment, which had been started on a small scale in 1911, was extended to cover practically the whole of industry. As a result of this the twofold restraint which had held back trade unions in pressing for increases and resisting decreases in wage rates was very greatly weakened. For now, if, by doing this, they indirectly make unemployment higher, the burden on their own finances and the suffering of the unemployed men will both be very much less than they used to be. This fact is bound to modify their wage policy to an important extent; and to modify it in a way likely to make the unemployment percentage larger. There are no means of determining by objective tests how much of the extra unemployment that prevailed in the inter-war years was due to this cause. My own impression, or, if you prefer it, guess, is that a substantial part of it can be accounted for in this way.

And again:

"Wage-earners might, in effect, choose better money wage rates *instead of* better employment."

Coming from an avowed socialist these admissions are quite remarkable and raise many profound issues unfortunately beyond the scope of a brief review.

University of Virginia

DAVID McCORD WRIGHT

*Output and Productivity in the Electric and Gas Utilities, 1899-1942.* By Jacob Martin Gould. New York: National Bureau of Economic Research, 1946. Pp. xii, 195. \$3.00.

For each year between 1899 and 1942 this volume presents estimates of output and of principal items of input for the electric and gas utilities of the United States. Separate treatment is accorded the group of utilities distributing manufactured gas and the group distributing natural gas, although later they are considered together. The items of input studied are fuel consumption, capital and employment; and output per unit of each of these is computed for the years 1899 through 1942. Logarithmic parabolas are fitted to every series: those of

output, those of input, and those of output per unit of input. "Growth curves" of this type have a single parameter, which indicates the rate of retardation. Thus for each series there are available annual estimates of the quantity and of the rate of change, together with an over-all estimate of the rate of retardation in the rate of change.

The gas and electric utilities present an exceptional opportunity for a study of this type. The data are relatively simple, accurate, and complete. The products are comparatively homogeneous, among firms at any given time as well as over the years. There is no difficulty in determining which firms should be included in the study and which should be excluded, and those rare firms with other interests maintain a separate accounting of their utility business. Some adjustments in the available data have been necessary, of course, but these have been accomplished with care and ingenuity. An output study could hardly have been presented under more favorable conditions.

Yet what is there to show for the labor that this study entailed? We already were aware that these industries had experienced rapid increases in output and marked improvements in efficiency. Dr. Gould supplies precise estimates of the amount of the changes and of the rate at which they have taken place. But how does this degree of precision on past input, output, and productivity contribute toward a solution of the problems that these industries present? Or does the whole value of this study lie in some contribution to an explanation of business cycles within the period 1899 to 1942?

Such interpretation as the author supplies is of brief compass and unsatisfactory character. Dr. Gould warns that "secular trends traced by fitted growth curves . . . cannot, of course, constitute a basis for prophecy," but 30 pages later he is informing his readers of the exact year in which each of the industries will reach its "theoretical peak." His findings and the introductory chapter of Dr. Fabricant are permeated with references to the relative "maturity" of the industries under review. This conception of an industry as a living organism is unwarranted, and it is dangerous. It leads the author easily to analogies that imply the very extrapolation of secular trends which he explicitly rejects.

*University of North Carolina*

FRANK J. KOTTKE

*The Development of Economic Society.* By George Matthews Modlin and Frank Traver deVyver. Revised edition. Boston: Heath & Co., 1946. Pp. x, 474. \$3.00.

The revised edition of Modlin and deVyver's *Development of Economic Society* appears at a time when it is becoming more and more important for the general public to be enlightened on the major economic problems of the nation. Such information was formerly regarded as important for the student of economics. Under present conditions, however, the general citizen needs to have some basis for making judgments on economic affairs and some ability to analyze data and to form critical judgments. In this process a book like the *Development of Economic Society* is helpful indeed.

In this volume the historical development of our present economy is traced. The chapters treat in survey fashion the emergence of mercantilism and economic nationalism from the medieval economy, then the industrial and agricultural revolution of the 18th and early 19th centuries, and finally the technological development of the present and preceding centuries, with the concomitant changes that have taken place in modern production and exchange. The authors attempt to study and point up the economic principles of each period against the practical settings of their times and in the final section stress the impact of current considerations on our present-day economic theories and practices.

The book is well planned and well written. It is lucid and readable. The economic analysis is competent. Within the limits set for themselves by the writers they have produced a compact, coherent, and well-organized study. The general reader will gain much from it. The specialist will be disturbed by the lack of detail, by the omission of references and a bibliography.

The man of the street today who is troubled by phrases and labels used by columnists, commentators, and others, will find in this volume information which will help him in answering for himself such questions as to whether private enterprise must give way to socialism, whether private enterprise can be so improved that no emergency measures will be needed, whether it will function best with government measures held in readiness and used when needed, the extent to which government intervention has been sought throughout the country's history, and the like. He may regret that affairs of the present are treated so briefly. But in a historical survey events of the past 25 or 10 years cannot be treated disproportionately. The reader who feels that a paragraph or two is too summary a disposition of current movements will have a sound background for further study of a more specialized nature.

Hollins College

MARY PHLEGAR SMITH

*Agenda for Progressive Taxation.* By William Vickery. New York: Ronald Press, 1947. Pp. xii, 496. \$4.75.

The author of this book, as he states in the preface, is not much concerned with the theory and philosophy of progression. In fact, he does not seem to think that it is possible to derive any guide or general principle to indicate the proper rate of progression since "... we know literally nothing of the actual effect of different tax rates and different distributions of income on incentives" (p. 374). Nevertheless, he is in favor of progression, and apparently at a fairly steep rate, since at a few places he mentions the possibility of rates in excess of 100 per cent of incomes. His purpose in this book is to explain and prescribe remedies for a number of major defects in our income and death taxes which prevent the realization of effective and equitable progression.

The items on the agenda are divided into three major groups, according to the degree of urgency. In the most urgent group are: full taxation of capital gains and full allowance of capital losses; the abolition of tax-exempt interest; closing the loophole afforded by life insurance; and finding an effective way to tax the

undistributed profits of corporations. In the second group are these: allow separate returns for all married couples but remove their tax advantage over joint returns; allow an earned income credit; eliminate deductions (except for business units) of taxes and mortgage interest; restrict the deduction for contributions; and several other minor changes.

In the third group are fundamental reforms involving basic changes; here the author develops two unique and far-reaching proposals. The first is for a comprehensive cumulating averaging arrangement in the income tax whereby the taxpayer would carry forward from year to year his aggregate income and taxes paid (plus computed interest on the taxes). The purpose is to allow the individual an almost unlimited period for averaging by carrying losses forward and backward so that his tax burden will be "completely unchanged by any shifts in the way his income is allocated to the various years." The author is not able to make up his mind about the length of this averaging period; the ideal would be from the majority to the death of the taxpayer, but he mentions several factors which would favor or require shorter periods. The advantages of such a plan would be real and substantial and would probably outweigh the great administrative difficulties which would be encountered, especially in the transition period. It is doubtful, however, if it would be as successful in reducing evasion and avoidance as the author seems to think; the American taxpayer can still be counted on to develop a few new tricks.

The second proposal is designed to eliminate some of the many complex and technical schemes used to avoid succession taxes. It is a most complicated and abstruse plan called the "bequeathing power succession tax"; it would integrate the federal gift and estate taxes and require that when wealth passes from one individual to another the succession tax would be the same regardless of the devices and channels used to make the transfer. The purpose of the proposal is eminently sound and desirable but as a practical matter it is utterly hopeless; neither lawmakers nor taxpayers, in general, could understand the principles, much less apply it.

Throughout the book, the author presents the spendings tax as a possible substitute for the income tax and in chapter 12 he analyzes it at some length. On balance, he seems to favor it and dismisses its effect on the savings-investment relations as not especially important. This reviewer would disagree on both administrative and economic grounds.

This book is a comprehensive and penetrating survey of the defects of our present tax laws together with imaginative and stimulating proposals for their correction. The author obviously has a thorough grasp of those laws and has examined a wealth of tax cases which illustrate their working. Any student of taxes can study it with profit.

*Duke University*

B. U. RATCHFORD

*Economics of Public Utilities.* By Emory Troxel. New York: Rinehart & Co., 1947, 892 pp. \$5.75.

Professor Troxel has done a thorough and workmanlike job in preparing this

text. Dealing with a subject which this reviewer has always thought borders on the dull side, he has made the book as readable as one could expect. He writes clearly if not excitingly; and aside from a few minor features, such as the persistent misplacement of the negative particle in such sentences as "All firms did not distort their accounting records before 1930" (p. 115), and the occasional use of such a verbal atrocity as "scatteration," he leaves little basis for criticism on stylistic grounds.

The keynote of the book is that public utilities constitute a problem in social control. The two major aspects of the problem are, first, the question of where the line should be drawn between ordinary businesses and those that are so "affected with public interest" as to require special treatment; and second, the question of whether the special treatment should be public regulation or public ownership. In the five opening chapters, dealing with the so-called characteristics of public utilities and with the different agencies of control, local, state, and federal, the author shows clearly how the concept of what constitutes a public utility has been a developing one, often with fuzzy edges, worked out by "reasonable men" to deal with specific situations as they arose. The second aspect of the problem is presented as being essentially a question of economics. The author maintains discreet impartiality between public ownership and public regulation, although in the preface he confesses to a slight personal predilection in favor of the former.

The economic analysis which is introduced to throw light on the problems of operation and regulation and which is quite detailed and thorough runs largely in terms of cost and demand under conditions of monopolistic competition. If there is any criticism to be made of this feature of the book it is that the treatment is unnecessarily full since so much of the analysis would apply equally to businesses other than public utilities and has presumably been covered by students in previous courses in economics.

Most of the descriptive and illustrative material deals with the electric, water, gas, and local traction industries. With the exception, however, of two chapters on rural electrification and radio broadcasting, which are somewhat oddly placed in the center of the book in the midst of a long series of chapters on the economic aspects of utilities in general, and four chapters at the end on regional projects, the various utilities are not separately treated. Chapters 6 to 21 inclusive deal with economic problems of control, such as valuation, depreciation, and fair rate of return. Chapters 24 to 30 inclusive treat of price structures and forms in utilities generally.

There is a good index covering 25 pages, but the publishers have followed the abominable practice of putting all the references to sources and authorities at the end of the book, so as to make it nearly certain that no student will lay eyes upon them. Even so, the text itself contains enough material to satisfy most instructors. It commends itself especially to those who desire thorough economic analysis rather than mere description or political pleading. It lives up to its title, *The Economics of Public Utilities*.

Davidson College

C. K. BROWN

*National Product Since 1869.* By Simon Kuznets. New York: National Bureau of Economic Research, 1946. Pp. xiv, 239. \$3.00.

An analysis of the income or national product of the United States since the Civil War is presented by Mr. Kuznets through a series of statistical tables. Annual estimates are given for 1919 to 1943 inclusive, and averages per year for each decade between 1869 and 1939.

Much of the present study is based on past work of the National Bureau of Economic Research, dealing with income and capital formation. Comparisons of estimates of the various categories are made with the findings of W. H. Shaw's *Value of Commodity Output Since 1869* and the Department of Commerce estimates of the flow of commodities to consumers.

A breakdown of national product in four categories is made: (1) flow of commodities to consumers, (2) flow of services to consumers, (3) flow of goods to consumers, (4) national capital formation.

Basic calculations are made on the flow of commodities and capital formation. Previous estimates of the National Bureau on the flow of commodities going to consumers are modified to charge off business uses of automobiles. Similarly, on capital formation a careful distinction is made between a peacetime concept and a wartime concept. Under a wartime concept, military production and capital formation for military purposes are excluded.

Goods, as defined by the author, include commodities—perishable, semi-durable, and durable—and services. The flow of services is calculated by deducting commodity flow and net capital formation from national income. All available sample data on family expenditures for services, however, are analyzed in Part Three of the book.

Of particular current interest is the author's distinction between the peacetime and wartime concepts of national income and net national product. In his calculations, for example, it is estimated that the net war output in 1943 was \$50 billion (in 1929 prices) as compared to a net flow of goods (commodities and services) to consumers of \$93 billion. For the same year the net capital formation for nonwar purposes was minus \$9 billion. Through this procedure, more accurate conclusions can be drawn on the actual cost of World War II. Another interesting observation is that two-thirds of the net capital formation for nonwar uses during the 25 years between 1919 and 1943 was made in seven of the more prosperous years. Comparisons are greatly facilitated by the conversion of all series to 1929 prices.

Full explanations are given by the author as to the techniques used in all calculations. The text is specifically designed for reference use by research workers on phases of income and capital formation of the United States. The author points out that scarcity of data has necessitated many assumptions and cautions against unjustified conclusions. The detailed estimates, however, are a major contribution to the field of income estimates in the United States.

*University of Georgia*

WILLIAM T. HICKS



*Wage Theories Before Certain Industry Committees of the Wage and Hour Administration.* By Mary Yolande Schulte. Washington: Catholic University of America Press, 1946. Pp. vi, 341.

This doctoral dissertation is number 19 in Catholic University's Studies in Economics. It is mostly spade work, as such studies should be. Chapter I devotes 75 pages to the development of wage theories in economic thought. The last section, The Maximum Employment Theory, sets forth the pronouncements of popes and other Catholic churchmen on the subject of wages. The author is uncritical of these obviously well-intentioned but illogical and sometimes meaningless admonitions. No amount of "Christian concord of minds" can resolve problems of economic conflict so as to leave all groups satisfied, as Lord Stamp has so clearly pointed out (*Christianity and Economics*). Suppose a "living wage" for all takes more than the total product? Does society want maximum employment or maximum production? Can a family living wage be sustained if families are large? Were Australia's minimum wage laws so successful? (See *Fortune*, Aug., 1931, for tendency of firms to discharge young men as their approaching birthdays foreshadowed a raise. There a living wage is defined as a sum sufficient to "maintain a worker, his wife, and two children in a house of three rooms and a kitchen, with food, plain and inexpensive, but sufficient in quantity and quality to maintain health and efficiency, and with allowances for fuel, clothes, furniture, utensils, life and accident insurance, union pay (dues), books and newspapers, train fares, amusements and holidays, intoxicating liquors and tobacco, sickness and death, domestic help, religion and charities"; also for a picture of the idle on relief because employers could not afford to pay them the legal minimum, in a country where resources are great in relation to population.) How different is Pope Pius XI's "program for setting wages, hours, and volume of production by a system of organized 'Industries and Professions'" from fascist corporations? How can control of output and prices be reconciled with the reference to Chamberlin (p. 54) "that all factors receive a return smaller than their marginal product, and that no one factor is exploited at the expense of another" in a system containing more elements of monopoly than of pure competition? Monsignor Ryan's "elements of a decent livelihood" (p. 59), though laudable, are impossible to measure objectively. The whole idea of the family living wage is dangerously close in its logic to the medieval notion that a man should be allowed to receive enough to maintain his station in life, which results in an order based upon status and not upon contract. Does Pius XI's statement that "in determining the amount of the wage the condition of a business and of the one carrying it on must also be taken into account," mean wages in accordance with ability to pay with all the concomitant economic rents which such a system entails?

The purposes and prescribed procedures of the Fair Labor Standards Act of 1938 are summarized in chapter II. The next five chapters contain the meat of this institutional study. Sister Schulte has patiently combed the thousands of pages of transcribed testimony and the briefs filed before the industry committees charged with establishment of minimum wages for the passages which

reveal either directly or inferentially the wage theories of the witnesses. She chose for analysis the work of committees dealing with the following industries: textile, shoe manufacturing, railroad carrier, lumber and timber products, converted paper, rubber, and gray iron jobbing foundry. Each chapter has a summary of employer and employee arguments (also those of public representatives in the shoe industry chapter) and chapter VIII gives the summary and conclusions for the study as a whole.

Contrary to expectations, the study makes fascinating reading. Here are the actual questions and answers relating to the effect of statutory minimum wages, either with or without regional differentials, on the industry's ability to pay them and survive, on total unit costs of production, consumer resistance to higher prices, migration of industry, imports, volume of employment, ability to pay higher wages to the more skilled, etc. Here are the reactions of witnesses to the relative merits of location of industry in large cities versus small towns, and their beliefs respecting the cost of living, standards of living, and actual levels of living there. Incidentally, the law of comparative costs was mentioned only once.

Employers used the maximum employment theory in all hearings, the marginal productivity theory in six, the subsistence and residual claimant theories in four, the wages fund and efficiency theories in two, and the bargaining theory in one. Employees used the bargaining and maximum employment theories in all hearings, the efficiency theory in six, and the marginal productivity theory in two.

The second question for which an answer was sought, "Is there a general pattern of wage theories common to all types of industry?" was answered in the affirmative, "as the same general pattern of arguments characterized most of the hearings" (p. 300).

Space does not permit comment on all points of interest. Three must suffice. Railroad employee spokesmen contended that higher minimum wages would not produce unemployment as a result of the substitution of machines since, "when the machine has been found practicable, it will be purchased regardless of the wage rates paid" (p. 213). Obviously there is no such clear-cut line separating practicable from impracticable. Surely the fact that railroads in the South and Southwest can hire maintenance workers for lower wages than others pay has something to do with their lesser use of machinery.

The WPA report on *Mechanization in the Lumber Industry* was quoted (p. 235) as finding that for seven of ten years studied "total labor costs per thousand feet of lumber produced were higher in the low wage areas than in the high wage areas." Might not the larger trees and denser stands of timber in the Pacific Northwest have something to do with the greater mechanization there and higher output per man as compared with the South?

The author confuses increase in demand with increase in quantity taken.

Appendixes give definitions by administrative order of industries, membership of committees, and names of persons appearing before the committees. A selected bibliography follows.

*University of Kentucky*

RODMAN SULLIVAN

*Labor Force Definition and Measurement.* By Louis J. Ducoff and Margaret J. Haygood. New York: Social Science Research Council, 1947. Pp. x, 134. Paper, \$1.00.

This labor market study, sponsored by the Social Science Research Council, is a thoroughgoing description of the development of the labor force concept since the 1930's. It not only gives a clearcut definition of the factors which are considered in enumerating and in analyzing the labor force, but it also contains an excellent chapter dealing with labor force dynamics, which would be excellent material to use verbatim in any labor text dealing with measurements of employment and unemployment. After showing how the labor force concept has displaced that of the gainful worker, used in censuses prior to 1940, this study proceeds to analyze the ever increasing number of variable factors which condition our employment and unemployment statistics of today.

In the measurement of the labor force (Appendix B), a comparative analysis is made of population-wide sampling and other sources of data on unemployment. It is made obvious to the reader that no single sampling technique can supply all of the desired information in "photographing" the labor force at any particular time or even through a period of time.

The sampling device used by Gladys Palmer and Ann Ratner in a metropolitan area, as explained in Appendix C, not only indicates what good results can be secured from concentrating on such areas, but also points out inferentially what can be done with such a technique if projected on a national scale. This work thoroughly emphasizes the progress we have made in more accurately defining the conventional "labor supply." It also points up the possibilities through use of statistical techniques in more accurately determining employment and occupational trends in the future.

*Alabama Polytechnic Institute*

CHARLES P. ANSON

*Wage Determination and the Economics of Liberalism.* By E. Wight Bakke and others. Washington: Chamber of Commerce of the United States, 1947. Pp. 105. Paper, \$1.00.

This title represents a group of addresses delivered on January 11, 1947, at the First 1947 Economic Institute of the Chapter of Commerce of the United States by E. Wight Bakke, John T. Dunlop, Fritz Machlup, Felix Morley, Jacob Viner, and Leo Wolman.

The nature of the contents of the volume can perhaps best be indicated by giving a brief summary of what appears to the reviewer to be the central theme of the six addresses.

The essence of economic liberalism is "that attitude of mind which, in the sphere of business, respects the personality and . . . the integrity of others" (Morley, p. 9). Government intervention destroys economic liberalism and "every extension of State authority . . . should be viewed with suspicion and opposed on principle" (Morley, p. 13). Not only state authority but monopoly is also the enemy of economic liberalism. Monopoly "... is always an evil for those who genuinely believe in free enterprise" (Viner, p. 23). This is true of both the giant trade union and the giant corporation.

The indictment by economic analysis of monopoly power is sweeping. Both labor and business monopolies raise real costs and thus impede the optimum allocation of human and material resources (Viner, pp. 24-27). Certain monopolistic and institutional practices have grown up which lead to administered wage and salary structures (Dunlop, pp. 41-43). By implication, at least, these practices tend to narrow the limits of flexibility in the wage-price structure. Monopolistic wage setting by powerful unions impedes full employment and results in the more powerful labor groups exploiting the less powerful (Machlup, pp. 59-61). On the whole, collective bargaining and labor organizations as they now exist are "... incompatible with the operation of a competitive economic system" (Wolman, p. 98).

The remedy for this dilemma is a determined attack on both business and labor monopoly. On the side of business, the solution must hinge on vigorous measures against "corporate combines, trade associations and monopolistic practices, together with tariff reductions and patent reform." The size of business firms must also be cut down where this can be done without "excessive loss of technological efficiency" (Machlup, pp. 80-81). On the side of labor, we must "retrace some of the steps by which we arrived at present labor conditions and decide what form of economic control is calculated to do the most good and the least harm" (Wolman, pp. 99-100). The most urgent need is to decentralize our labor relations by reviving independent unions with "local initiative and local autonomy."

The obvious inconsistency between the solution calling for more social control and Mr. Morley's views on economic liberalism is resolved by the fact that apparently Professors Viner, Machlup, and Wolman (and very probably Dunlop and Bakke) do not fully accept Mr. Morley's definition. Professor Viner particularly insists that it is within the state's legitimate power to keep monopoly constantly on the defensive.

The remedy presented is a utopian solution, grandly conceived. Few people who are really concerned about the future of the nation's economy would disagree with its desirability. But it seems politically unrealistic in a society whose collective decisions on economic matters are tending more and more to be expedient compromises dictated by the interplay of various interest groups.

While there is little that is new in these six papers, they deal with what is undoubtedly the central economic problem of our time with refreshing clarity and incisiveness. This little volume will repay a careful reading.

*University of Alabama*

LANGSTON T. HAWLEY

*Economics of Transportation.* By D. Philip Locklin. Third edition. Chicago: Richard D. Irwin, 1947. Pp. x, 885. \$5.50.

Professor Locklin's *Economics of Transportation* has been conspicuously successful, both in adoptions and in influence, in a field that contains several meritorious competitors. The text is notable for its clear exposition. In the third edition, the facts and the discussions of policy have been revised to reflect changes that have occurred since 1938. There have been no fundamental

revisions in the organization or in the boundaries of the subject matter that is presented.

Each group of related chapters in this text is almost completely self-contained. The reader finishes every topic with the feeling that while he may not have the answers to the problems under consideration, he has been given all the relevant factors, not only in enumeration but in the necessary interrelationships. There are few visible loose ends. On the other hand, there are no *ex cathedra* pronouncements closing discussion of problems that are inherently controversial.

Although economic theory is emphasized, it is characteristic of the book that one of the annotated bibliographies refers the student to "any standard text on the principles of economics." There is nothing esoteric about the author's theoretical system. He uses no differential equations and he has invented no new conceptual gadgets. What he does is to demonstrate, in a variety of applications, that the traditional concepts and laws of economic theory are still useful tools. For this reason, the work is recommended not only to students of transportation, but also to those who doubt the worth of the familiar undergraduate courses in economic principles.

Perhaps it is not fair to scold Professor Locklin for deficiencies that are found not only in his but in other available texts on transportation. This seems to be as good a place as any, however, to suggest that room should be made in the general transportation course for at least summary discussions of the economics of ocean shipping, of urban transportation, and of those aspects of carrier organization and operation that are still unregulated. If it is objected that the course is already too crowded, it may be answered that the suggested additional topics are more interesting and more critical than the history of transportation in the nineteenth century, or than the customary list of the steps and missteps that have led up to the present form of the Interstate Commerce Act.

Washington, D. C.

HAROLD KELSO

*Money and Banking.* By Charles L. Prather. Third edition. Chicago: Richard D. Irwin, 1946. Pp. xii, 803. \$5.00.

The author's stated purpose in writing this revision as well as the original volume that first appeared in 1937 was to provide a book for beginning students in a money and banking course. The text is divided into three parts. He discusses the nature and functions of money in the first 13 chapters and follows that in chapters 14 through 29 with a treatment of commercial banking. He devotes the remaining 37 chapters to specialized financial institutions.

The reviewer of a text for beginning students is inevitably confronted with the question of the proper content of a course in money and banking. Should the course be primarily descriptive of the historical development of the country's banking and monetary system with emphasis upon the minute shades of differences in legislative enactments and an equally extensive description of present day banking operations? Or, perhaps should the course be devoted to a discussion of general monetary and banking theory and principles with the descriptive material added for illustrative purposes or to give some assurance of reality?

The writers of a great many money and banking texts evidently have had the former conception of the content of the beginning college course. To some degree, at least, they have met the interest of students. Students, as well as the average man in the street, seem to have an intense interest in answers to such questions as "How much gold is back of our money? Can a man pay all his debt in pennies? How much of a five dollar bill is needed for redemption? Whose portrait is on a \$50 bill?" They can emerge, perhaps, from a course equipped to state the required reserve ratios for member banks, or, if they are exceptional students, the difference between the mint and market ratios. Many of them, however, never discover how the volume of bank deposits changes. Neither do they appear to be equipped with the simple monetary theory needed to make intelligent decisions upon such current controversies as the issue of tax *vs.* debt reduction, or consumer credit control.

Professor Prather chose to provide the content for a beginning course in money and banking by using extensive descriptive material. Although he includes what he calls controversial topics, his approach is largely descriptive. The difficulty of where to begin a subject so complex probably contributes to some of this tendency. For example, the author recognized the importance of an early understanding of the theory of the value of money and devoted an early chapter to its discussion instead of postponing it toward the end of the course. Because the discussion of how the  $M'$  is created is postponed to a latter section, however, the full implications may be missed by the beginning student.

A similar difficulty is indicated in the chapter that follows wherein it is stated that gold has an effect upon bank reserves and the expansion of credit, but neither here, nor previously, has there been any explanation of what bank reserves are nor how credit is expanded. In another instance, a chapter is devoted to deposit currency. Eleven pages of this chapter discuss the meaning and historical development of deposit currency and the technical differences between deposit currency and money. How one writes a check rather than how the volume of deposits changes is typical of the discussion. Although the author states that "from the viewpoint of the banking system as a whole" borrowing at banks is the most important type of deposit creation, but three pages in this chapter are devoted to its discussion and chiefly the inflationary aspects of deposit creation are considered. In another instance, consumer financing institutions are described and usurious practices discussed. Neglected are such questions as whether or not consumer credit has any effect upon general price changes or the business cycle.

Necessarily, an author with as wide an acquaintance with the details of the banking and monetary system as the one who has written this volume is well equipped to pass judgment upon many current controversies. Although at times he withholds judgment of the correctness of either of the two sides presented, there are occasions when definite opinions are given. As to the future of the gold standard we "should either abolish gold and concentrate on improving management or else strengthen the gold standard on an international basis." Evidently he has little hope of the latter event since he states in another chapter



that the eventual goal should be to eliminate all types of government control over international financial transactions and to "establish equilibrating mechanisms such as existed under the international gold standard."

As to the past, "Between the two world wars it was the reports of accountants rather than 'runs' on banks by depositors that brought the death knell of banks," and "bank examinations and reports contributed to the inflationary and deflationary factors at work during the business cycle." He appears to favor a higher capital-deposit ratio since he states, "If the 1 to 10 ratio had been adapted previous to and maintained throughout World War II, there would have been less war financing with bank credit, and financing would have been more difficult. . . . There probably would have been fewer postwar readjustments." Regarding deposit insurance, "Instead of aiding in the development of a sound banking structure, the success of the Federal Deposit Insurance Company may hinder it, by blinding the public to the inherent defects of a system made up of a large number of small banks."

Concerning recommended changes, he states, "The office of the Comptroller of the Currency should be abolished, and all its functions should be transferred to the Federal Deposit Insurance Corporation." The directors of the latter should be responsible to the Board of Governors of the Federal Reserve System. "Simplification of the country's financial structure calls for liquidation of the Reconstruction Finance Corporation."

Although he believes that "the existing financing devices are adequate in number, flexibility, and variety to satisfy all legitimate needs of business," he later asserts that "in order to assure small business an adequate supply of capital funds, it is recommended that the Federal Reserve Banks be permitted to use the funds appropriated by Congress to finance lending under the Industrial Loan Act in order to guarantee capital loans made by financial institutions."

This edition appears to be a real revision. Both the textual material and the tables have been brought up to date in factual data and the discussion reveals revision in the light of recent developments. This type of intellectual honesty, which unfortunately is not always true of postwar editions of some texts, should be a source of pride to both author and publisher, particularly because of the complex nature of the descriptive material and the length of the volume. The printing and paper are excellent. An extensive bibliography follows each chapter as well as numerous questions.

*Federal Reserve Bank of Atlanta*

CHARLES T. TAYLOR

*Survey of Labor Economics.* By Florence Peterson. New York: Harper & Bros., 1947. Pp. xv, 843. \$4.00.

Unusually broad and varied personal experience has furnished the background for the *Survey of Labor Economics*. Miss Peterson has passed through the stages of college teacher and investigator for private business, and has completed ten years as director of industrial relations research in the U. S. Bureau of Labor Statistics. Her work combines an impartial attitude with a thorough knowledge of actual conditions in the vast field under review.

The book distributes 27 chapters among four parts: Part I—Employment and Unemployment; Part II—Wages and Hours; Part III—Labor Unions and Management; Part IV—Social Security. Readers wishing to obtain a clear idea of the underlying nature of the labor problem will be well advised to concentrate their attention on the discussion of "Theories of Unemployment" (chapter 6) and "Theory of Wages" (chapter 9). It is here that Miss Peterson defines principles and reveals her general attitude.

In approaching theory, she defines theories as "tentative assumptions in the quest for truth" (p. 230) and stresses the "possibility that a theory which may seem valid at one stage of economic development may be inapplicable under a different set of circumstances" (p. 230). This relative approach, important as it is rare in elementary surveys, is followed in the discussion of full employment. While stating that few present day economists would accept the concept of the automatic attainment of an equilibrium of full employment, the author is equally careful to state that "although the theory that oversaving and underspending are the root causes of mass unemployment has become increasingly popular, it is by no means universally accepted" (p. 156). It is against this background that we must consider her conclusion that government action is necessary for full employment. The consequences of this attitude are clearly outlined. "The essence of government action for attaining full employment lies in fiscal and monetary controls based upon a new kind of national budget. It assumes that the taxing power of the government should be used to serve a twofold purpose in addition to its traditional role of providing revenue: First, taxes should be used as a lever for regulating the flow of investment and consumer purchasing, and second, they should be used as a means for diverting surplus funds into channels which would increase consumption and employment" (p. 159).

Within the general framework of the discussion of full employment we must consider the chapter on theory of wages. An excellent explanation of the development of various theories of wages stresses the importance of knowing backgrounds. Miss Peterson does not hesitate to formulate an explanation which underlies much of her discussion of present-day situations and policies. "Aggregate wages cannot exceed the productive efficiency of the industrial process. Marginal subsistence determines the level of minimum wages, else workers could not survive; marginal productivity establishes maximum levels, because marginal employers cannot pay more in a competitive market. In a progressive society the difference between subsistence and productivity levels tends to widen, and the extent to which actual wages rise above subsistence depends largely upon the supply of labor relative to the demand for labor" (p. 255).

The relatively few pages of theoretical analysis are accompanied by well-written and comprehensive descriptions of contemporary conditions and problems in every phase of the field of labor relations. Reading the careful analysis of legislative enactments one can but regret that publication antedated the passage of the Taft-Hartley Labor Relations Act. One need not accept the publisher's claim that this is "the definitive volume on labor economics," but

one must accept it as a well-written, scientific, and comprehensive treatment of vital economic problems.

*University of Virginia*

D. CLARK HYDE

*Viewpoints on Public Finance.* Edited by Harold M. Groves. New York: Henry Holt & Co., 1947. Pp. 724. \$4.25.

This is a collection of 127 readings (some recent, some of historical interest) from books, journals, government reports, court decisions, editorials, etc. The 13 chapters follow the organization of Groves' *Financing Government*. About 90 authors are represented. Seven selections are by Groves; 6 from the Committee on Intergovernmental Fiscal Relations; 5 by Seligman; 4 each by the National Tax Association, Hansen, and Ronald B. Welch; 3 each by the Tax Policy League, Smith, Mill, Lutz, and Shoup; 2 each by Simons, Blough, and Edwin H. Spengler. One selection represents each of 77 other persons and organizations. The editor scrupulously refrains from criticizing views divergent from his own, but frequently places conflicting opinions in proximity and gives cross-references to other views.

Chapters 1-3 contain 26 readings. On the distribution of governmental burdens, benefit, ability and sacrifice principles are discussed, Seligman and Taussig defend progression, Lutz criticizes it, and Groves opposes constitutional tax rate limitation. On the general property tax, significant articles are "The Inevitability of Rates," by Hicks, Hicks, and Leser, and "New Revenues for Municipalities," by Groves. Shifting and incidence includes Wells' diffusion theory, Hobson's "functional approach," and selections on capitalization and general income, payroll and sales tax incidence.

Chapters 4 and 5, "Net Income" and "Death and Gift Taxes" (22 selections), include Simons' definition of net income, F. D. R. on evasion and avoidance, state income taxes, and selections on taxation of cooperatives, capital gains and losses, stock dividends, undistributed and excess profits. Shoup compares taxes of married couples with those of single persons, and Groves compares personal with corporate income taxes. Shultz discusses estate *vs.* inheritance taxes, two articles treat of intergovernmental relationships, Mill and Stamp explore the effects of death duties, and the Wisconsin Inheritance Tax Statute is exhibited.

On business and consumption taxes, chapters 6 and 7 present 16 readings. Studenski's able essay "Toward a Theory of Business Taxation" justifies a tax on business as such (cf. Groves, above). There are readings on taxation of public utilities, railroads, airlines, banks, insurance companies, chain stores, conflicting tax jurisdictions, and the National Tax Association's "Model Plan." Lutz and Seligman argue for and against sales taxes, luxury and tobacco taxes are discussed and, in a sparkling little essay from his book *Economics*, John Ise demolishes the tariff.

Other revenue sources and over-all tax problems (27 readings, chapters 8 and 9) discuss payroll taxes, old-age insurance reserves, forest and severance taxes, municipal utility earnings, special assessments, the Single Tax, and classification of public revenues. Governor Goodland's message vetoing the Wisconsin bill

to segregate highway tax revenues, and a congressional debate on the poll tax, make interesting reading. Groves considers municipal incentives to new industries, R. M. Haig discusses coordination of federal and state tax systems, while a Royal Commission considers dominion-provincial fiscal relations in Canada. James W. Martin evaluates costs of tax administration and compliance, and Stephen Leacock outlines "The Limitations of Federal Government" (1908).

After some 500 pages on taxation, chapter 10 (16 selections) covers public expenditures. The proper scope of government functions, growth and theory of public expenditures, cost of war and of public education, "The Veterans" (a *Life Magazine* editorial), public investment, public works, and federal and state grants-in-aid are all treated. James K. Pollock tilts with the patronage windmill, while William Turn writes "In Defense of Patronage." With picturesque examples the Tax Policy League describes the confusion in government subdivisions and suggests reorganization.

Public debts, budgets, and fiscal policy (18 readings, chapters 11 and 12) include the views of Steuart, Smith, and several modern scholars. Monetary aspects of national debt policy and the significance of interest rates are considered. Hansen treats of state and local debt limitations, and international loans and investments. War inflation and the capital levy are briefly touched. Sundelson, Myrdal, and Harold D. Smith discuss budgetary theory and practice. G. R. Walker suggests a tax on hoarding. Beveridge, Hayes, and Lerner advocate fiscal policy to fight unemployment and regulate the economy, Lutz condemns "functional finance," while Terborgh tells us not to fear the bogey of economic maturity. The conclusion (chapter 13) contains Roy Blough's penetrating essay on "Conflict and Harmony in Taxation," and Abraham Epstein's "Cannot Complain About Taxes." Despite the drastic changes in our tax structure since it was written in 1933, everyone should read this essay before sending his newspaper editor a letter signed "Irate Taxpayer."

Lack of an index is regrettable, especially where titles do not truly describe the contents. Many readings include the original footnotes and tables, but in some cases citations are omitted. Editorial footnotes give the source of each selection, and bibliographical notes end each chapter. Short introductions integrate the readings, which are in double columns. Diversity of viewpoints and plenitude and brevity of selections make this book valuable for collateral reading. It can profitably be used by students and teachers of every economic persuasion, and also by lawyers and the lay brothers.

*The Woman's College,*  
*University of North Carolina.*

PAUL M. GREGORY

*The Farmer in the Second World War.* By Walter W. Wilcox. Ames, Iowa: Iowa State College Press, 1947. Pp. 410. \$4.00.

Professor Wilcox has done his country and its farmers a distinct service in making available for general use this record of "the more significant information relating to farmers and agriculture during the second World War." To this the

author has contributed a background of political and economic factors leading to specific action programs and interspersed the whole with his own illuminating and objective interpretations. The result is an historical study which is easily read, thoroughly documented, and highly useful.

Before going into a discussion of the problems incident to the change from a peacetime to a wartime agricultural economy (chapter 4) the author provides us with a brief chapter on the significance of the war to agriculture, another describing the condition and problems of agriculture at the outbreak of the war, and a third dealing with public institutions serving agriculture just prior to the war. Chapters 5, 6, 7 and 8 take up, in succession, wartime agricultural production, marketing, use of manpower, and use of land. In these chapters the author presents data from official records to emphasize such important truths as the following: agriculture's phenomenal production record; increased use of farm machinery and output per worker; advances in ideas regarding nutrition; reductions in trade barriers; significant shifts in land use; and the growing importance of farm forestry.

It is in the next seven chapters (9 through 15) that Professor Wilcox has opportunity to draw most directly upon his background of training and experience as he discusses the controversial issues centering around the formulation and administration of price policies for agriculture. He reviews the controversy which raged between the administration, which wanted separate controls on prices and wages, and Congress which, on the one hand, wanted to include wage controls in price control legislation and, on the other, to avoid price ceilings on agricultural products except at parity levels or above. The result was an unfortunate delay and a continued increase in the price level. He also presents an interesting and illuminating report on the behind-the-scenes maneuvering which went into price control legislation and which eventually paved the way for incentive payments or agricultural subsidies in lieu of higher market prices.

In appraising price policies during the war the author states that the "greatest mistake . . . was the imposition of price ceilings . . . without adequate provision for keeping the supplies flowing through the established channels."

The remaining chapters (16-23) are concerned with such topics as technological developments, international trade, industrial expansion, the changing role of the Department of Agriculture, and the increasing influence of farm organizations.

There is so much of real worth in the book that this reviewer is reluctant to single out any particular part for criticism.

Clemson College

G. H. AULL

*The Role of Government in Labor-Management Production Committees.* By Doris Duffey. Washington: The Catholic University of America Press, 1947. Pp. xi, 227.

Since VJ day there has been much complaint on the part of management that workers are not as efficient and that output per worker has declined greatly when compared with prewar years. Many students of employer-employee relations

have expressed the opinion that the only permanent solution of this production problem is greater cooperation between labor and management. They contend that only when labor is given a voice in management will the morale of the working force be restored.

The book under review deals with labor-management committees created under the direction of the War Production Board during the war years. It was written in partial fulfillment of the requirements for the degree of Doctor of Philosophy and was published by the Catholic University of America as Volume 20, *Studies in Economics*. The book is divided into three parts. Part I deals with the nature and objectives of labor-management production committees, their historical background, organization and structure, activities, and estimates the success of these committees.

Part II covers the period of World War II. It deals in detail with the structure and functions of labor-management committees organized from March 1942 to September 1945 and of the role played by the government of the United States, through the War Production Drive Division of the War Production Board, in promoting and servicing them. During this period some five thousand war plants throughout the country accepted and enjoyed the help and cooperation of labor-management joint production committees.

The author submits much evidence to show that the committees played a very important part in increasing the production of war materials and supplies. She states that millions of man-hours and dollars were saved by suggestions made in committee meetings; many tons of copper, steel, etc., were saved through conservation efforts and salvage campaigns; the life of tools was greatly extended by committee education; better equipment was produced as the result of committee programs for improving quality of work; joint efforts of labor and management reduced the rate of industrial accidents and deaths; many millions of man-hours were saved through reduction of absenteeism, and greater efficiency and better morale resulted from such cooperation. These conclusions are based upon statements made by government officials, management, labor officials, public figures, and the press.

Part III examines labor-management committees in the light of Catholic principles of government intervention in labor-management relations. The author concludes that such committees are clearly in line with Catholic social teaching since they increase the dignity of the workers, promote democracy in industry by giving labor a share in management, lead to the elimination of class conflict and the promotion of the common good.

The author does not propose that the government exercise control over either labor or management. The formation of such committees should be a voluntary undertaking entered into because both sides believe that such cooperation will produce good results. The government should confine its activities to promoting the idea, rendering any services necessary to help the parties work out an efficient system and to help put it into operation.

While there is considerable repetition in certain chapters, the book on the whole is well written. Its contents should be of great interest to those people who are



now wrestling with the serious problem of employer-employee relations. We may not be prepared at the present time to go as far in the matter of employer-employee cooperation as the author suggests but ultimately such cooperation may be inevitable.

*University of Virginia*

GEORGE T. STARNES

*International Trade and Commercial Policy.* By Lawrence W. Towle. New York: Harper & Bros., 1947. Pp. xiii, 780. \$4.50.

This is a broad, comprehensive postwar textbook in the field of international trade and foreign trade policies. While the author by no means neglects theory, his principal emphasis is on institutions and practices, especially those which have developed during the past 20 years.

After a brief sketch of early trade and trade practices, the author devotes three chapters to the classical theory of international trade and its modifications and refinements. He then examines in considerable detail the nature, mechanics, and effects of tariffs and bounties. In two chapters he then evaluates the many arguments for protection; he rejects them all except, possibly, the infant-industry argument. In a particularly good chapter he discusses the various forms of indirect protectionism—administrative regulations, protective excise taxes, etc.

Two chapters on commercial treaties and tariff bargaining are followed by three chapters on the various forms of restrictions which developed after 1914—import quotas, exchange control, clearing agreements, etc. One chapter each is devoted to dumping, international combinations, merchant marine policies, and colonies. A total of eight chapters on foreign exchange and other monetary and financial topics are sandwiched in between other topics at various places throughout the book.

As the author says, he makes no pretense of blazing new trails in the field; rather, he tries to organize and present to the student the principal findings resulting from the great amount of work which has been done by a host of scholars. In this he has, it seems to this reviewer, done an excellent job. He has drawn heavily on the monographs and special works of others; he has integrated the material very well, and his exposition is exceptionally clear, lucid, and straightforward. Well-chosen lists of reading at the end of each chapter will be useful to both student and teacher.

The author is a staunch advocate of the greatest possible freedom in international trade. At some points this zeal leads him to take positions which might be difficult to defend. For example, in evaluating the high wages argument he states (p. 278) that "... the United States had one of the highest wage levels in the world long before she had any protective tariff. . . ." It is not clear just what period of time he had in mind at that point. At another point (p. 308) he argues that free trade would be advantageous to one nation regardless of the policies pursued by other nations, but at other places he admits world trade can be restored only by the joint action of many nations. Perhaps the chief criticism of the book is that the author is too optimistic about the benefits of international

trade because he has almost complete faith in the working of competition within the domestic market. He points out some of the imperfections himself when he discusses international cartels and combinations.

For the future, the author pins considerable faith on the working of the United Nations and its related organizations. He admits that trade of the pre-1914 type is not to be expected; more and more, trade must depend on international planning and cooperation. One thorny problem which is likely to be increasingly important in the future he mentions but does not discuss at length—how free economies can trade with state monopolies. As more and more of the world's industry becomes socialized that may become the dominant aspect of international trade in the years to come.

*Duke University*

B. U. RATCHFORD

*How Should Corporations be Taxed?* By Roy G. Blakey and others. New York: Tax Institute, 1947. Pp. xii, 251. \$4.00.

This volume comprises 20 papers presented during the two-day symposium named. Successive sections deal with reform proposals, small corporations, alleged discouragement of present taxes on business enterprise, taxes as instruments of regulation of the economy, and selected detailed aspects of corporation taxes. An introductory chapter by Roy C. Blakey summarizes descriptively and in tables the main aspects of current reform proposals. A useful bibliography and index are appended.

The discussion inevitably goes far beyond the limited field of corporate taxes. An attempt was apparently made to select speakers to present opposing viewpoints on controversial questions. Labor leaders, corporation executives and tax specialists, tax counsel, government economists, university professors, economic consultants—all are represented. Unfortunately this does not guarantee that truth will emerge. Nor does this apparently even exert a restraining influence on the tendency of most speakers dogmatically and one-sidedly to present the well-known positions of the interests they represent on policy questions. Can one guess what Matthew Woll of the AFL would say as to whether corporations as such should be taxed? Or what W. L. Hearne, tax supervisor of the U. S. Steel Corporation, would say as to whether the present tax system discourages business enterprise? There are a few exceptions to the dogmatic approach. J. Keith Butters of the Harvard Graduate School of Business Administration contributes a well-reasoned paper on the proposal to tax the profits of small corporations like partnership earnings. Richard Goode, Treasury tax research economist, similarly discusses the postwar corporation tax structure, and John L. Connolly, secretary-general counsel of the Minnesota Mining and Manufacturing Company, gives a balanced, moderate paper on "Should Corporations be Taxed as Such?"

The papers in the section on "Detailed Aspects of Corporation Income Taxation," being mainly descriptive and historical, are much less given to propaganda. Here are discussed the present penalty tax on unnecessary corporate accumulations of earnings; the annual accounting period and its modifications; deprecia-

tion, depletion, and research and development costs; and consolidated returns. Each topic is ably discussed, but nothing new is added to the literature on the subjects.

An evaluation of the book depends on the standard used. There is little or no contribution to economic thought. But perhaps the book purports to be only a popular presentation of current attitudes on the questions presented. By this standard it is fairly successful, but it is revealing of the superficiality of much of the argument that passes as analysis in the field of taxation policy. Is it too much, for instance, to expect that a person arguing that corporation and individual income and surtaxes discourage business enterprise, should also consider alternative sources of revenue and their repercussions? Or should cite a few facts to substantiate the numerous assertions made? Granted that the motivations of investors and business managers are inherently difficult of proof, does this excuse complete abandonment of the inductive method?

U. S. Bureau of Internal Revenue,  
Washington, D. C.

WIRTH F. FERGER

*Certain Aspects of the Economic Development of the American Negro, 1865-1900.*

By Albert Lawrence De Mond. Washington: Catholic University Press, 1945. Pp. xii, 187.

The period 1865-1900 was the period when the Negro began his American citizenship. The issue of slavery had been settled and the Negro commenced his struggle for a place as a free man in a competitive economy. Shorn of the protective cover of the slave system in which he *was* property, he must now compete with every man for the ownership and control of property, for the right to work, and for the income from his labor. This was a period in which the United States was making rapid strides in economic growth, expansion, industrialization. "New techniques of control over the life of the nation through devices of abstract property and impersonal corporate management" were leading to large capital accumulations and concentration of control over economic activity.

The struggle of the newly emancipated Negro to gain a competitive toe hold in the American economy, the problems with which he had to deal and the progress he made in overcoming them is the subject of this study. It was written as a doctoral dissertation in the School of Social Science of the Catholic University of America.

There is little in this that is new by way of materials on the economic status and progress of Negroes during the period under study. What is new is the manner in which the materials are thrown against the background of the developing economic order of this time and an analysis which attempts to throw in relief, clearly, the differentials between this group and the rest of the population—which a slave-agricultural background, geographic location, occupational handicaps, and the race factor created—and the effect of these differentials on the competitive position and progress of the group.

The slave-agricultural background provided very few of the skills for competi-

tion in an industrial world. Located geographically in that part of the country least industrially and commercially developed, the vast majority of the Negro population remained in agriculture and related industries which provided a lower per capita income than the more industrialized and more highly developed sections of the country. Factors requiring "large aggregations of capital, large scale production, technical skills and political and commercial advantages" prevented successful competition of enterprises by Negroes in this field on a significant scale. Segregation prevented Negroes from gaining apprenticeship training in business, finance, commerce, and the newer and more rapidly developing trades.

All this forced Negroes into the nonskilled lower paid jobs in industry, transportation, etc., and confined their more successful business enterprises to the field of retail and service establishments depending largely on the "protected" market of the segregated Negro community. In spite of this, the number and importance of Negro banks, insurance companies and societies, retail and service establishments, and the variety of types of enterprises attempted attest to the great desire and struggle of the Negro to move into "the main stream" of the economic phases of American culture.

Although the general organization of the book is good, considerable confusion might have been avoided by a more careful placement and relating of statistical and documentary materials to the text. Regrettable is the practice of grouping a series of somewhat related tables together when reference to any one of them may be made in separated sections of the text. For instance, on page 43 reference is made to "this list of typical Negro business enterprises" when the preceding table is concerned with the occupational distribution of the Negro population.

These are minor criticisms, however. The study makes a considerable contribution to an understanding of the incentives, motives, and accomplishments of the Negro during the period in review and sets some valuable guides for the study of the economic progress and problems of this minority group in later years. The study also emphasizes the fact that economic progress of any minority group must be related to that of the majority. Segregation, and the resulting discrimination, prevents integration of the segregated group on an equitable scale in the total economic organization. The retardation which results may serve to widen the economic gap between the majority and the minority although progress be made by all. Lower relative living standards for the minority must follow.

*Fisk University*

GILES A. HUBERT

## STATE REPORTS

### ALABAMA

Industrial production in Alabama during the first part of 1947 has generally maintained a high level of activity as indicated by the index of industrial production prepared by the Bureau of Business Research of the University of Alabama. Retail sales likewise have been high, well above the same months of last year, but the increases have apparently been due to price rises rather than to increases in volume of goods sold. There have been a number of weak spots at times during the first part of the year. Coal production was adversely affected by the stoppage of operations after the Centralia disaster and again by the coal holiday in July. This affected industrial activity adversely but the effects seem to be disappearing. Layoffs have been reported in a number of industries particularly in textile mills, rubber, and aluminum. Lumber stocks have been accumulating and numerous complaints are heard among lumber producers and distributors that it is difficult to move their supplies. Merchants have reported slowing up in the movement of some lines of merchandise. Generally, however, commodities are still hard to get and employment has been at a high level.

Construction has been active. The activity in Tuscaloosa has been particularly conspicuous especially when the relatively small size of the city is taken into consideration.

Interest in industrial development has continued at a high level. Reports are still commonly made that the number of industries which could be attracted to particular locations is almost unlimited providing some guarantee that an adequate supply of raw materials can be obtained and that a plant can be got ready for occupancy and operations within a reasonable period. These, of course, are difficult conditions to meet in view of the shortage of space and the difficulty of bringing construction projects to a close and also of the shortage of essential types of material, particularly steel. It has been frequently reported that it is almost impossible to get a prospective tenant to move into an industrial site until construction is complete and the building is ready for full occupancy. This undoubtedly grows out of the difficulty of being able to get a piece of construction completed even though it may get to a stage where completion seems near at hand.

A number of outstanding examples of developments have occurred during the past year and some of these may be cited. Geologists have long discussed the probability and the significance of a discovery of chemically pure salt in the area around Mobile and now it has been reported that large deposits at shallow depths have been discovered. It has also been reported that four large chemical manufacturing concerns are making geological surveys of the area and that the discovery may lead to the establishment of several large chemical plants. Soda ash, obtained from salt, is used extensively in the paper manufacturing industry which has been assuming a large place in the industrial economy of the Gulf area. The production of this chemical would form the base for an important industry.

During the war a large ordinance plant was built in Gadsden, Alabama, which has been in the hands of the War Assets Administration for disposal for some time. It has recently been announced that this plant has been leased to the Allis-Chalmers Company of Milwaukee, Wisconsin, and that the company has announced that it will use the plant for the manufacture of tractors and mechanical cotton pickers. The tractor to be manufactured has been described as being small with the motor in the rear and plows in front. The plant is located near the Republic Steel Corporation's Gadsden plant, and contains forge and machine shops.

Another large plant which has been somewhat of a problem is the ordinance plant that is located near Childersburg, Alabama. The War Department has signed a lease with the Coosa River Newsprint Company of Talladega, Alabama, for the use of the plant for the production of newsprint and paper. It is reported that the plant can be used to produce 100,000 tons of newsprint annually from southern pine. More recently, it has been also announced that the operations of the mill will be in the hands of a Wisconsin company, the Kimberly-Clark Corporation.

The Blue Bell, Incorporated, one of the world's largest manufacturers of work clothes, is planning to construct a \$350,000 plant at Oneonta, Alabama. This is a relatively small plant but represents a development that is taking place in many of the smaller cities and towns.

Interest in petroleum production in Alabama has continued. Drilling in the Gilbertown area has proceeded steadily and widespread exploration is taking place in the state. Production has been on a relatively small scale and no sensational developments have received public mention but there is a disposition on the part of those who are following the situation to think that there are good chances that operations will reach significant proportions.

Another field that has been attracting a great deal of interest in Alabama has been foreign trade. One phase of this has been the revival of ocean travel to and from the port of Mobile during recent months. It has been reported that ocean travel has set a new level during the year 1946. In 1945, persons entering and leaving the port by ship totaled 2,075, which exceeded the high previous total of 1,967 persons in 1939. With regard to freight movements the port of Mobile cleared 5,414,896 tons of freight, an increase over 1945 of 1,137,488 tons and 290,000 tons greater than the previous record set in 1941. Steamship company officials attributed the increase to the resumption of full peacetime commercial shipping and to heavy relief shipments to Europe and China.

The Department of Commerce reports that exports from Mobile in 1946 amounted to \$110,900,000, the principal commodity being cotton and cotton manufacture, iron and steel products, lumber and lumber products and naval stores. The export figures include lend-lease and UNRRA shipments. Imports of raw materials likewise have been high and, generally speaking, the activity has continued during the first months of 1947.

Another item of interest in connection with foreign trade has been the promotion of a ship to travel to Central and South American countries with Alabama



products on a tour of exposition and encouragement of foreign trade. The War Department has assigned a ship to be used for this purpose and an organization representing the business interests has been active in planning the project. A bill has been introduced into the legislature asking for an appropriation to bear a portion of the cost of reconditioning the ship and financing the exposition trip.

Since this is a legislative year, a great deal of interest centers on state revenues and expenditures. The U. S. Department of Commerce reports that the general revenues received in Alabama during 1946 totaled \$106,264,000 and that total expenditures were \$98,995,000. The Alabama fiscal year begins October 1 and the State Revenue Department reports that it has collected \$51,048,257 from some 40 Alabama taxes during the first eight months of the current fiscal year. This compares with \$42,061,090 during the same period of the previous year. The sales tax has forged ahead of the gasoline tax during the month of May as the leading revenue producer. The sales tax during that month yielded \$2,102,561 as compared with the gas tax of \$2,093,066.

In the legislature a number of proposals have been made looking toward the securing of additional revenues but no important new tax has been proposed as yet. It seems probable that legislation may be passed which will result in strengthening the revenue department in its efforts to secure full payments of taxes. On the other hand, the issue of exemption from gasoline taxes for owners of tractors has been brought to the front and there is a chance that such a measure may pass. Perhaps the most important revenue measure is the submission to the voters of a constitutional amendment which will permit the use of funds collected from the state income tax for education. This tax was imposed several years ago under an amendment to the constitution which provided that the proceeds of the tax should be used to retire an issue of bonds which were used to refund the floating debt of the state when that debt became extremely embarrassing during the depression period. Any excess income over and above that needed for the servicing of the bonds was to be used for the reduction of ad valorem taxes. A homestead exemption law was passed and the loss in revenue was recouped from the proceeds of the tax. In recent years, a surplus has been accumulating over and above what was needed both for the servicing of bonds and the homestead exemption provision, and one of the hotly contested problems within the state has been the question of disposing of the surplus. A great many have held out for its use in reducing ad valorem taxes. On the other hand, the need of money for education resulted in the submission of an amendment somewhat over a year ago which lost, and now the proposal is resubmitted for another vote.

Mention has already been made of the shortage of materials, particularly steel. This, of course, is a nation-wide condition and has resulted in very high prices for steel scrap. Connected with this demand has been the development of a ship wrecking industry in Mobile. There have been two companies in operation and a third is setting up a plant. It is reported that Mobile's ship-wrecking industry has dismantled and scrapped more than 25 vessels and has produced an estimated 250,000 tons of scrap.

Another item of interest to those who are concerned with trends in population

arises from an announcement concerning Alabama's birth and death rates. It is announced that 77,922 births were registered during 1946, and that this figure represents a 19 per cent increase over 1940 and 6 per cent above the average for the last five years. During the same period the death rate dropped from 9.2 to 8.1 per 100,000 population. These figures would seem to indicate that Alabama will scarcely cease being one of the sources of recruiting the population of the United States within the foreseeable future.

*University of Alabama*

H. H. CHAPMAN

## FLORIDA

The Florida state legislature adjourned June 6 after its regular 60-day biennial session with no new tax legislation passed in spite of an assortment of sales tax proposals submitted to it. Some of these bills were intended to replace the general property tax completely as a source of local government revenue. Record breaking appropriation acts were passed, chief items among which were a doubling of state aid to the public schools to about \$35,000,000 and 50-100 per cent increases in funds for various state institutions and agencies. Coupled with expansion in highway expenditures and other continuing appropriations, this will result in total state expenditures upward of \$150 million in 1948-49.

Legislators' reluctance to expand the tax base, while approving these record-breaking appropriations, was stiffened by the knowledge that current tax yields were accumulating sizeable surpluses in the state's coffers. End of the fiscal year (June 30) revealed a cash balance of \$74,303,822, of which only \$17,897,572 was unallocated, however. These compared with \$62,136,803 and \$17,244,015 respectively a year ago. During the year \$26,000,000 had been set aside for a long overdue building program at various state institutions. Year-end reports also indicated that this postwar upsurge in state tax collections was being stemmed, as alcoholic beverage tax receipts were \$1,369,301 (6 per cent) less than in 1945-46. On the other hand, the yields from gasoline, race track betting, and cigarette taxes were ahead of last year.

The legislature likewise failed to heed the pleas of the cities for any form of general financial assistance, either additional tax fields, or a share in some additional state taxes, or grants-in-aid. These latter types of assistance are not given to cities in Florida. As a result city after city is turning to local revenue sources such as taxes on utility bills and cigarettes, sewer rentals, garbage disposal fees, and parking meters. Many are also carrying out a program of property revaluation directed toward putting assessments at 100 per cent of value as required by state law. Counties meanwhile continue to assess property at varying percentages less than full value, not having to face any state-wide equalization, or the supervision of any state tax authority. Counties are heavily subsidized from state collected funds. Property tax collections on the 1946 roll were running over 99 per cent in many counties.

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The legislature, acting partially on the recommendation of a Citizens Education Committee, changed the status of Florida State College for Women to

Florida State University, coequal with the University of Florida. Both institutions were made coeducational for the first time, subject to necessary housing limitations in the immediate future. Stipulation was made that no existing schools or colleges could be moved from their present location. None of the several proposals to establish a state-supported medical school was adopted.

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End of the 1946-47 season brought reported utilization of citrus fruits up to 83½ million boxes, compared with 86 million boxes in 1945-46. Dry weather and high winds during the fall and early winter followed by severe cold weather in February caused a loss of an estimated 15½ million boxes of fruit. In a move to prevent the infiltration of the "quick decline" orange disease, now reported over large areas in the West, the Florida State Plant Board extended the ban on entry of California oranges into Florida throughout the summer.

Florida's vegetable and truck crops, which had trebled in value over the decade ending in 1945-46 to become a \$100,000,000 per year business, were also hit hard by the February freezes. Shipments during the 1946-47 season fell 30 per cent under the previous year, Irish potatoes, celery, and tomatoes suffering the biggest losses. Other phases of the state's agriculture, especially the dairy industry, continued to expand but Florida remains heavily dependent upon imports of dairy products. Commercial fishing along the Gulf Coast has been endangered by the appearance of a mysterious "red tide" at intervals this spring, which killed millions of fish and littered several beaches.

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After a banner tourist season in 1946-47, Florida's biggest industry has been utilizing the summer to prepare for another wave of winter visitors. Results of a sample survey of hotel registrants conducted by the Florida State Chamber of Commerce over the past year and one-half indicate that 34 per cent of the tourists came from the Middle Atlantic States, 29 per cent from the rest of the South, 24 per cent from the Central States, 7 per cent from New England, 2 per cent from the West, and 4 per cent from abroad. Results of this survey, indicating greater numbers from the Central States than previously thought, will be used as a basis for planning the advertising and publicity campaigns of Florida's counties and cities, which will run to about \$950,000 this year. Plans to add 40 more hotels to 332 already built in Miami Beach have been announced, with at least a third of these under construction this summer. Building permits in that city alone in June totaled almost \$3,000,000 and are expected to total \$35,000,000 for the year.

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Indications of a softening in the postwar upward trends were present in the labor market early in the summer. Manufacturing employment experienced more than the usual seasonal decline after reaching a peak of 88,500 in March. Only the lumber and timber products industries were continuing to employ many more workers. Construction employment was also keeping ahead of 1946 levels.

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Domestic help was becoming easier to get in many areas of the state and improving in quality according to FSES reports.

Florida retail sales, which during the first quarter of this year were about 20 per cent above the same period of 1946, showed the usual seasonal decline in the second quarter but were still well above 1946 totals.

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The long-awaited ICC order on disposal of the Florida East Coast Railroad properties, in receivership since the early thirties, was handed down on May 20. By a close 5 to 4 vote, the commission approved consolidation of this road with the Atlantic Coast Line system. In open defiance of this ruling, trustees of the A. I. Dupont estate, who hold a controlling interest in F.E.C., declared their intention to contest this ruling in the federal courts "regardless of time and cost."

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Unusually heavy summer rainfall (16.5 in. in June and 11.9 in. during the first half of July) in south Florida focused attention on flood control and drainage in the Lake Okeechobee-Everglades areas. The Army Engineers' long-range plan to convert 920 square miles of Everglades wasteland into productive agricultural use, through a vastly expanded flood control and drainage system, received enthusiastic support at a public hearing in that area on June 18. Actual work on the program will have to wait upon congressional approval. This plan calls for extending the margin of cultivable land area to the southeast from its present limits near the rim of the lake.

Still farther to the south and extending to the Gulf of Mexico on the west lies the site of the 1,200,000 acre Everglades National Park. This was established in June by Secretary Krug after the state of Florida turned over \$2,000,000 voted by the legislature to purchase privately owned land in the area. Legal complications remain to be straightened out both in Florida and Washington. These are mainly over the question of title to oil and gas rights in the area. Perhaps significant in this connection is the recent shift in the hunt for Florida oil, heretofore centered largely in the area of the state's only producing wells near the edge of the Everglades, to the northern and western part of the state.

*University of Florida*

C. H. DONOVAN

## NORTH CAROLINA

In midsummer 1947 general economic activity in North Carolina is holding steady at the high level of the past year. In response to a weakening of demand for certain items, numerous cotton textile plants reduced their production schedules in the last spring and early summer in an evident desire to avoid building up excessive inventories. The weakening of demand seems to be due to the cautious buying program of retailers, who are also afraid of high inventories. There has been no noteworthy decline in retail trade in the state, and the number of persons employed has not been adversely affected to any considerable degree, although total payrolls have, of course, declined in some localities. Prices are holding pretty steady at high levels.

Building is fairly active, but has not swung into boom proportions. Small dwelling houses are going up in rural and suburban areas, but large building projects seem to be slow in coming to the contract stage.

Probably the cautious attitude that has just been indicated can be traced to the belief which was widespread a few months ago that a sharp decline in prices and production was more or less imminent. In July the psychology of the people seems definitely to have changed. There is still not complete confidence that the boom will rise to higher levels, but there is much more of a feeling that it may be able to maintain its present level for some time to come. If nothing occurs in the next several months to shatter this optimistic view, the effect may well be that of encouraging construction and the accumulation of inventories which down to the present have been regarded as somewhat speculative. At the moment the most interesting thing about economic conditions in North Carolina is this general feeling that we are on a sort of economic plateau, the descent from which is not likely to occur soon enough to justify persons who would like to make commitments in holding their cash for that time.

The general structure of economic life in the state is strongly supported by the continuing great prosperity of agriculture. The prices of almost all farm products have been firm to strong in recent months and crop conditions in the state have been good. An unusually good crop of small grain was harvested in the early summer. While it is still early to prophesy concerning corn and tobacco, these staples seem to be in promising condition. Cotton has suffered from a late spring, from cool summer weather, and in some sections from excessive moisture, but there is still much time in which it can develop, and even a moderately good crop will yield handsome returns in dollars if present prices hold through the harvesting season. The prosperity of farmers is helping to hold retail trade at high level, is making possible the reduction of farm indebtedness, and is providing the means for the increasing mechanization of agriculture, which seems to be dictated by the relative difficulty of securing labor for the farms. Fortunately no speculative boom in the buying and selling of farm land at inflated prices is in evidence. To the extent that such a boom can be avoided agriculture in North Carolina will be building soundly for the future.

*Davidson College*

C. K. BROWN

### SOUTH CAROLINA

The upward trend in number of people employed in South Carolina has levelled off and there are signs of a decline in total number employed in the state. There were 483,000 people engaged in nonfarm work in June, slightly fewer than during the two previous months, according to the U. S. Employment Service. The number registered for employment increased more sharply than these figures would indicate because many of those who were in school during the winter have been seeking work since school closed.

Claims paid by the South Carolina Employment Security Commission have been increasing for some time although the number receiving claims has not greatly increased. Some of those receiving unemployment benefit payments have been doing so for a long period of time. Claims paid during May totaled \$241,000 as compared with \$222,000 in April and \$182,000 in January. Some of the increase was due to a decline in industrial activity along some lines, but other

factors contributed to the increase. With less urgent need for labor some women are less anxious to work than during the war period and would like to spend more time working in their homes. Some employers are also reported to be replacing less efficient labor with more efficient labor now that labor is more plentiful. Changes in the complexion of the labor force tends to be reflected in an increase in unemployment compensation benefits paid.

\* \* \* \* \*

Since the textile industry constitutes such a large portion of South Carolina's industry, the amount of cotton consumed by local mills is a fairly good index of industrial activity. Cotton consumption the first five months of 1947 was well above that of the corresponding period a year earlier. However, consumption of cotton in May was down sharply from April and was slightly less than in May 1946. Unofficial reports indicate that consumption in June was less than in May. Textile activity in May and June, however, was very high as compared with pre-war years.

The people of South Carolina continue to enjoy unprecedented prosperity. This is readily seen when taxes collected by the South Carolina Tax Commission during the past fiscal year are compared with earlier years. Revenue collected by the South Carolina Tax Commission totaled \$68,247,000 for the fiscal year July 1, 1946-June 30, 1947. This compares with \$44,483,000 two years earlier and \$41,736,000 four years earlier and \$24,719,000 for the fiscal year July 1, 1938-June 30, 1939. Income tax collections during the past fiscal year were 7 times as large as during 1938-39, and since there has been no change in rates on personal incomes this would indicate a substantial increase in earnings on the part of the public. Income taxes collected during the past fiscal year totaled \$20,082,000 or exceeded the amount collected from the tax on gasoline which was \$19,601,000. This is quite a different situation from what it was eight years earlier when total income tax collections amounted to only \$2,770,000 and gasoline \$11,975,000.

\* \* \* \* \*

Much of the handicap caused by the cold late spring has been overcome and the total agricultural acreage is about 4 per cent larger than a year earlier. The increase in small grain and cotton accounts for the larger portion of the increased acreage. The row crop acreage was held down to some extent by weather conditions earlier in the spring. Crop prospects the first of July had improved over those of a month earlier and with favorable weather conditions total agricultural production in 1947 should be fairly large. Because of the dry weather and blue mold farmers generally obtained poor stands of tobacco from early settings and most growers had to do a great deal of replanting. Although tobacco production this year, according to the Bureau of Agricultural Economics, will be 16 per cent smaller than in 1946 it will be 40 per cent above the 1936-45 average. Record wheat and peach crops were produced this year.

\* \* \* \* \*

A study dealing with the administration of natural resources publicly owned in South Carolina has recently been published by the University of South Carolina



Press. The book *South Carolina's Natural Resources* by Christian L. Larsen traces the history of public ownership of South Carolina resources and indicates progress made in the administration of such property.

*Farm Credit Administration  
of Columbia, South Carolina*

GLENN R. SMITH

## VIRGINIA

There has been a substantial element of strength in business conditions in Virginia for the past six months in spite of the fact that considerable consumer resistance has developed in recent months. In the retail area, the volume of business remained high the first half of 1947 but a lot more promotional effort was necessary to get the business. Customers these days are more discriminating and are demanding quality goods. Department store sales, based upon reports from 20 stores, in dollar volume, in May 1947 were 15 per cent above sales in May 1946, and total sales in the first five months of 1947 were 12 per cent above the sales in the first five months of last year. Clothing is selling well, hard goods and cotton goods are holding up. Retail furniture sales in Virginia in May 1947 were 24 per cent ahead of sales in May 1946, and total sales in the first five months of 1947 were 12 per cent above the sales in the first five months of last year. Credit sales are rising, and collections are noticeably slower, probably as a result of regulation and price control days. There has been some damming up of inventories due to order padding, and the volume and rapidity of deliveries. As a result, stores have been running special mark-down sales to reduce inventories before stocking fall lines. Some of the larger department stores in the state are expanding selling space and adding new departments in anticipation of increasing sales.

Wholesale trade has held high, though there has been accumulation of inventories in some lines. Groceries remain at peak levels both in valuation and in tonnage. Automobile dealers are able to find buyers for all the cars delivered, and order banks are running 10 to 20 months ahead. Many deliveries are being made through the secondhand market. Here slightly used 1946 and 1947 models are selling at substantial premiums over the purchase prices of new cars. Automobile supplies, electrical goods, hardware, paper products, and industrial supplies companies are doing all of the business they can take.

\* \* \* \* \*

Employment in Virginia leveled off some during the first five months of 1947. A few small plants have had to close temporarily due to some slow-downs in industrial activity. Durable goods industries have tended to show a slight increase in employment, and the nondurable goods industries a small loss, part of which is seasonable. Manufacturing in the state continued at capacity, especially in the rayon, tobacco, and lumber industries. While new plant expansion planned in 1946 has not materialized because of high costs of construction and government restrictions, a number of small plants have been brought into production. Modernization of plants is going forward in many sections of the state.

Construction in the state is still large in spite of sales resistance. Prices of new housing units continue high, though home buyers are no longer buying from blue-

prints, but are looking and waiting longer. Building permit figures for seven cities in Virginia for May 1947 were \$4,742,000 as compared with \$1,866,876 for May 1946. The number of construction contracts awarded increased 35 per cent in the first four months of 1947 as compared with the same period for 1946. The labor situation is tight and promises to remain so throughout the year. Wages paid to some artisans are above the union scales for below normal production. Thus, reports seem to indicate that the building industry is still unstable due to costs, labor conditions, and materials deliveries, and until these are changed contractors will be unable to make firm contracts.

\* \* \* \* \*

Including government payments, Virginia farmers enjoyed, along with the farmers of the country, a substantial increase in net income per farm operator during the World War II period. Much of this went toward providing a higher level of living. Estimates for the United States at large are that farm income in 1947 will be 25 per cent above the 1946 level. For Virginia, it will remain about the same as 1946, since on the whole, the year 1947 has been a poor crop year. The weather has been cold and dry and unfavorable for germination of seed in the ground and for growth of crops. Frosts and freezes in the late spring caused widespread damage to fruits and injury to many field crops. Production of all fruit, except peaches, will be below the 10-year average. In spite of some increase in prices and a heavy demand, there will be a sharp decrease in the Virginia farmer's income from truck crops, fruits, grains, potatoes, and hay. The largest income losses will be from fruits, income from which is expected to decrease from \$35 million in 1946 to approximately \$12 million in 1947, a loss of \$23 million. A decrease is also expected from tobacco due to a poor season and to a decline in exports. Total income from tobacco in 1946 was \$75 million, and this year it is expected not to exceed \$60 million. Tobacco prices are guaranteed by the government and the price of the 1937 crop will not fall below 37 cents per pound on the average.

The increase in income from dairy products, eggs, poultry, and livestock is estimated to be sufficient to offset the losses from fruits and grains and to hold the total farm income for 1947 at about the same level as 1946. The income from dairy products is expected to be about \$55 million for 1947, an increase of 10 per cent over 1946. As for poultry, the annual income is running about level with that of 1946, but there may be some increase by the end of the year. The income from livestock is expected to exceed that of last year. The amount received in 1946 was about \$60 million, and this year the total is expected to go beyond \$70 million. A factor that may materially affect this situation is a report by the Department of Agriculture forecasting a sharp drop in the 1947 corn crop, and higher prices for feed. As a result, there may be some reduction in livestock and higher prices by the end of the year.

The labor situation has eased somewhat. Virginia farm wages have increased from the average of \$3.10 per day in 1946 to \$3.40 in 1947 with board, and from \$3.70 to \$4.15 without board. On a monthly basis, the rate increased from an average of \$52 in 1946 to \$63.50 in 1947 with board, and from \$72.25 to \$85.75

without board. One farmer reported that he was paying his one tenant farmer \$75 per month, and furnishing him everything he needed including "a cow from which to get his milk." Farmers in the state are more happily situated as far as farm machinery is concerned since the market has eased somewhat. They still have difficulty getting parts for combines and tractors. On the whole, the year 1947 will be a good year for the Virginia farmer.

\* \* \* \* \*

If Virginia banks are typical of banks in the Fifth Federal Reserve District, banking conditions in the state indicate a tendency on the part of many banks to tighten down on the extension of credit. For some months prior to May 1947, there was a decrease in loans and investments of member banks. While commercial, industrial, agricultural, and real estate loans showed a slight increase, securities of all types, except certificates of indebtedness, showed decreases. There was considerable drop in the holdings of United States bonds. Since May there has been a leveling off of loans. This may be only a temporary condition since the same trend occurred last year. Bank reserves showed some decrease due to losses of funds through commercial, financial, and Treasury transactions. There was a decline in average total deposits from \$1,286 million the last half of March to \$1,270 million the last half of April to \$1,265 million the last half of May. The decline was in the country banks, the deposits of reserve city banks remaining about the same. In spite of record tax payments in 1946, the year's gain in net current earnings after taxes was slightly greater than the increase from 1939 to 1945.

*University of Richmond*

HERMAN P. THOMAS

## PERSONNEL NOTES

Don Fay Adams, instructor in accounting, has resigned from the College of Business Administration, University of Georgia.

R. F. Beckert of Ohio University taught during the last summer in the College of Business Administration of the University of Florida.

Charles G. Bethea, general agent, State Mutual Life Assurance Company of Worcester, Massachusetts, is conducting a course in insurance at the School of Business Administration of Emory University during the current fall quarter.

Alvin B. Bisco, dean of the College of Business Administration, has been promoted to dean of faculties of the University of Georgia.

Everett R. Bollinger, Jr., has been appointed instructor in accounting in the School of Business Administration at Emory University. He is a graduate of the Georgia School of Technology, where he served as assistant in accounting.

Malcolm H. Bryan, formerly first vice president of the Federal Reserve Bank of Atlanta, is now vice president of the Trust Company of Georgia in Atlanta.

R. H. Cojeen has been appointed instructor in accounting in the College of Business Administration of the University of Florida.

W. S. Connor of Davidson college was on the staff of the College of Business Administration, University of Florida, last summer.

Ben Curry of the University of North Carolina was on the staff of the College of Business Administration, University of Florida, last summer.

J. E. DaVault, recently of the University of Rochester, has been appointed professor of accounting in the College of Business Administration of the University of Florida.

H. T. Deinzer, recently with the Bureau of the Budget, is now associate professor of accounting in the College of Business Administration, University of Florida.

Albert L. Diano, Jr., formerly of the U. S. Navy and recently graduated from the Harvard Graduate School of Business Administration, has been appointed instructor in marketing and accounting in the College of Business Administration of Loyola University.

C. H. Donovan, associate professor of economics at the University of Florida, has been appointed correspondent of *The Southern Economic Journal* for Florida.

A. R. Glancy, before his retirement as vice president of General Motors Corporation, has been appointed lecturer in business administration at the School of Business Administration, Emory University, and is offering a course in production management during the current fall quarter.

Frank Goodwin, formerly of Washington College, is now associate professor of economics in the College of Business Administration, University of Florida.

C. J. Guild, recently of the OPA, is now assistant professor of real estate in the College of Business Administration, University of Florida.

Charles W. Hayes, purchasing agent, Emory University, is conducting a course in purchasing during the present fall quarter in the School of Business Administration of Emory University.

E. L. Kelly from the University of Houston was on the staff of the College of Business Administration, University of Florida, last summer.

Francis J. Kennedy, formerly with the University of Connecticut, has become assistant professor of foreign trade and economics in the College of Business Administration of Loyola University.

James S. Lanham, formerly on the staff of the University of Southern California, is head and professor of the Department of Accounting in the College of Business Administration, University of Florida.

Judd Lewis of Duke University was on the staff of the College of Business Administration, University of Florida, last summer.

R. W. Mason, formerly of Mississippi State College, is now associate professor of insurance and economics in the College of Business Administration, University of Florida.

Wilbur T. Meek, recently of New York University, is now assistant professor of economics in the College of Business Administration of the University of Florida.

William Melcher, professor of economics at Rollins College, was on the staff of the College of Business Administration, University of Florida, last summer.

Louis Nola has been appointed instructor in accounting in the College of Business Administration, University of Florida.

Davis Parker has been appointed instructor in accounting in the College of Business Administration, University of Florida.

E. G. Peterson has been appointed instructor in accounting, College of Business Administration, University of Florida.

A. E. Ring, recently at New York University, has been appointed associate professor of real estate in the College of Business Administration, University of Florida.

Alan L. Ritter, wage analyst in the Atlanta Regional Office, Bureau of Labor Statistics, U. S. Department of Labor, has been appointed assistant professor of economics in the School of Business Administration at Emory University.

Robert T. Segrest, assistant dean, College of Business Administration, University of Georgia, has been promoted to professor of economics.

Ralph Turlington has been appointed instructor in economics and statistics in the College of Business Administration, University of Florida.

Alexander I. Warrington, formerly engaged in industrial research work, has joined the teaching staff in the College of Business Administration of Loyola University.

Weldon Welfling, formerly of Duke University, has been appointed professor of economics at Simmons College.

W. T. Whitman, formerly assistant professor of economics at The Citadel, has been appointed associate professor of economics in the School of Business Administration at Emory University.

The following names have been added to the membership of the Southern Economic Association:

Royall Brandis, 1406 G Street, NW, Washington 5, D. C.

Z. L. Galloway, U. S. Department of Agriculture, Washington 25, D. C.

James E. Gates, University of Virginia, Charlottesville, Va.

Robert W. Harrison, Louisiana State University, Baton Rouge, La.

Evelyn S. Hicks, 117 North 21st Street, Birmingham, Ala.

Luther H. Hodges, 107 Dellwood Road, Bronxville, N. Y.

E. W. Palmer, Kingsport Press, Kingsport, Tenn.

L. R. Paramore, U. S. Department of Agriculture, Washington 25, D. C.

Rollo P. Stovall, American Embassy, Ciudad Trujillo, Dominican Republic.

Robert C. Weems, Mississippi State College, State College, Miss.

#### NOTE

The seventeenth annual meeting of the Southern Economic Association will be held November 7-8, 1947, at the Henry Grady Hotel, Atlanta, Georgia.



## BOOKS RECEIVED

- Some Technical Aspects of Foreign Trade Statistics with Special Reference to Valuation.* By Nicholas Michael Petruzzelli. Washington: Public Affairs Press, 1946. Pp. x, 252. \$3.50.
- Social Policy in the Making.* By Paul H. Landis. Boston: D. C. Heath & Co., 1947. Pp. xix, 554. \$4.00.
- Economic Principles and Modern Practice.* 2nd edition. By Henry R. Mussey and Elizabeth Donnan. Boston: Ginn & Co., 1947. Pp. x, 834. \$4.50.
- Communists Within the Labor Movement.* Washington: Chamber of Commerce of the United States, 1947. Pp. 60. Paper covers, 25¢.
- The Elements of Economics: An Introduction to the Theory of Price and Employment.* By Lorie Tarshis. Boston: Houghton Mifflin Co., 1947. Pp. xii, 699. \$4.50.
- Economics of Transportation.* 3rd edition. By D. Philip Lochlin. Chicago: Richard D. Irwin, 1947. Pp. x, 885. \$5.50.
- Measurement of Consumer Interest.* Edited by C. West Churchman and others. Philadelphia: University of Pennsylvania Press, 1947. Pp. vi, 214. \$3.50.
- The Farmer in the Second World War.* By Walter W. Wilcox. Iowa State College Press, 1947. Pp. xii, 410. \$4.00.
- General Insurance.* 3rd edition. By John H. Magee. Chicago: Richard D. Irwin, 1947. Pp. xii, 913. \$5.50.
- International Trade and Commercial Policy.* By Lawrence W. Towle. New York: Harper & Bros., 1947. Pp. xiii, 780. \$4.50.
- Viewpoints on Public Finance.* By Harold M. Groves. New York: Henry Holt & Co., 1947. Pp. xii, 724. \$4.25.
- How Should Corporations Be Taxed?* By Roy G. Blakey and others. New York: Tax Institute, 1947. Pp. xii, 251. \$4.00.
- The Net Income of the Puerto Rican Economy, 1940-1944.* By Daniel Creamer. Rio Piedras: Social Science Research Center, University of Puerto Rico, 1947. Pp. 96. Paper, 50¢.
- Incomes and Expenditures of Wage Earners in Puerto Rico.* By Alice C. Hanson and Manuel A. Perez. Puerto Rico: Government of Puerto Rico in cooperation with the U. S. Bureau of Labor Statistics, 1947. Pp. 152.
- Farm Income and Prices: A Re-examination of National Policy.* By L. J. Norton. New York: American Enterprise Association, 1947. Pp. 34. Paper, 50¢.
- Survey of Labor Economics.* By Florence Peterson. New York: Harper & Bros., 1947. Pp. xix, 843. \$4.00.
- Bank Frauds: Their Detection and Prevention.* By Lester A. Pratt. New York: Ronald Press Co., 1947. Pp. vi, 248. \$4.00.
- Organization and Management in Industry and Business.* 3rd edition. By William B. Cornell. New York: Ronald Press Co., 1947. Pp. xvi, 819. \$5.00.
- The Political Problem of Industrial Civilization.* By Elton Mayo. Cambridge: Research Division, Graduate School of Business Administration, Harvard University, 1947. Pp. 26. Paper, 50¢.
- Aspects of British Economic History, 1918-1925.* By A. C. Pigou. New York: Macmillan Co., 1947. Pp. viii, 251. \$3.50.
- Cost Accounting: Fundamentals and Procedures.* 2nd edition. By Clarence L. Van Sickle. New York: Harper & Bros., 1947. Pp. ix, 889. \$5.00.

- Credit and Collection Management.* By William J. Shultz. New York: Prentice-Hall, 1947. Pp. xxvi, 814. \$6.35.
- A Foreign-Trade Zone for Puget Sound: Its Economic Desirability and Feasibility.* By Charles J. Miller. Seattle: Port of Seattle and the Division of Conservation and Development, 1947. Pp. 173.
- Report of the Director-General, International Labor Conference, Thirteenth Session.* Geneva: International Labor Office, 1947. Pp. 90.
- Report of Manufacturing.* By W. Scott Hall. Louisville: Committee for Kentucky, 1947. Pp. 24.
- The Beginning of OPA.* By William Jerome Wilson and others. Washington: U. S. Government Printing Office, 1947. Paper, 50¢.
- Introduction to Business.* By Raymond E. Glos and Harold A. Baker. Cincinnati: South-Western Publishing Co., 1947. Pp. vi, 730. \$4.25.
- Money and Banking.* By Weldon Welfling. New York: Crofts & Co., 1947. Pp. xvi, 631. \$4.50.
- Financial Needs of Devastated Countries, Interim Report.* Lake Success: Department of Economic Affairs, United Nations, 1947. Pp. v, 50. Paper, 50¢.
- America's Needs and Resources.* By J. Frederic Dewhurst and Associates. New York: Twentieth Century Fund, 1947. Pp. xxviii, 812. \$5.00.
- An Economic Survey of Allegany County, Maryland.* College Park, Md.: Bureau of Business Research, University of Maryland, 1947. Pp. 126.
- Leadership in War and Peace.* By Sanford Winston. Raleigh, N. C.: Agricultural Experiment Station, North Carolina State College of the University of North Carolina, 1946. Pp. 152.
- Wartime Apparel Price Control.* By Wilfred Carsel. Washington: U. S. Government Printing Office, 1947. Pp. x, 201. Paper covers, 40¢.
- A History of Ration Banking.* By Joseph Alexander Kershaw. Washington: U. S. Government Printing Office, 1947. Pp. viii, 150. Paper covers, 35¢.

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